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AKAI 4-CH/STEREO RECEIVER MODEL AS-960



4-CH/STEREO RECEIVER

MODE **AS-960**

SECTION 1	SERVICE MANUAL	3
SECTION 2	PARTS LIST	33
SECTION 3	SCHEMATIC DIAGRAM	55

SECTION 1

SERVICE MANUAL

2. 1

TABLE OF CONTENTS

II. DISMANTLING OF UNIT III. ARRANGEMENT OF MAIN PARTS IV. NECESSARY MEASURING INSTRUMENTS V. CLASSIFICATION OF VARIOUS P.C. BOARDS AND INTERCHANGEABILITY VI. FM TUNER SECTION ADJUSTMENTS 1. FM IF CIRCUIT ADJUSTMENT 2. FRONT END AND FM IF MATCHING ADJUSTMENT 3. TRACKING ADJUSTMENT 4. SENSITIVITY ADJUSTMENT 5. STEREO SEPARATION ADJUSTMENT 6. TUNING METER CENTER ADJUSTMENT 7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	7 8 9
III. ARRANGEMENT OF MAIN PARTS IV. NECESSARY MEASURING INSTRUMENTS V. CLASSIFICATION OF VARIOUS P.C. BOARDS AND INTERCHANGEABILITY VI. FM TUNER SECTION ADJUSTMENTS 1. FM IF CIRCUIT ADJUSTMENT 2. FRONT END AND FM IF MATCHING ADJUSTMENT 3. TRACKING ADJUSTMENT 4. SENSITIVITY ADJUSTMENT 5. STEREO SEPARATION ADJUSTMENT 6. TUNING METER CENTER ADJUSTMENT 7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	7 8 9
V. CLASSIFICATION OF VARIOUS P.C. BOARDS AND INTERCHANGEABILITY VI. FM TUNER SECTION ADJUSTMENTS 1. FM IF CIRCUIT ADJUSTMENT 2. FRONT END AND FM IF MATCHING ADJUSTMENT 3. TRACKING ADJUSTMENT 4. SENSITIVITY ADJUSTMENT 5. STEREO SEPARATION ADJUSTMENT 6. TUNING METER CENTER ADJUSTMENT 7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	9
VI. FM TUNER SECTION ADJUSTMENTS 1. FM IF CIRCUIT ADJUSTMENT 2. FRONT END AND FM IF MATCHING ADJUSTMENT 3. TRACKING ADJUSTMENT 4. SENSITIVITY ADJUSTMENT 5. STEREO SEPARATION ADJUSTMENT 6. TUNING METER CENTER ADJUSTMENT 7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	-
1. FM IF CIRCUIT ADJUSTMENT 2. FRONT END AND FM IF MATCHING ADJUSTMENT 3. TRACKING ADJUSTMENT 4. SENSITIVITY ADJUSTMENT 5. STEREO SEPARATION ADJUSTMENT 6. TUNING METER CENTER ADJUSTMENT 7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	
2. FRONT END AND FM IF MATCHING ADJUSTMENT 3. TRACKING ADJUSTMENT 4. SENSITIVITY ADJUSTMENT 5. STEREO SEPARATION ADJUSTMENT 6. TUNING METER CENTER ADJUSTMENT 7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	10
2. FRONT END AND FM IF MATCHING ADJUSTMENT 3. TRACKING ADJUSTMENT 4. SENSITIVITY ADJUSTMENT 5. STEREO SEPARATION ADJUSTMENT 6. TUNING METER CENTER ADJUSTMENT 7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	14
3. TRACKING ADJUSTMENT	15
4. SENSITIVITY ADJUSTMENT	
5. STEREO SEPARATION ADJUSTMENT	16
6. TUNING METER CENTER ADJUSTMENT	
7. STEREO INDICATOR SENSITIVITY ADJUSTMENT	16
(MUTING LEVEL ADJUSTMENT)	17
VII. AM TUNER SECTION ADJUSTMENTS	18
1. AM IF CIRCUIT ADJUSTMENT	18
2. TRACKING ADJUSTMENT	
3. SENSITIVITY ADJUSTMENT	
VIII. TUNING CORD THREADING	
IX. POWER AMPLIFIER ADJUSTMENTS	
1. CURRENT ADJUSTMENT AT NON-INPUT	23
2. POWER TRANSISTOR VOLTAGE DISTRIBUTION ADJUSTMENT	
X. COMPOSITE VIEWS OF COMPONENTS	

I. SPECIFICATIONS

An asterisk next to a figure indicates the minimum guaranteed performance.

§ AMPLIFIER SECTION

RATED OUTPUT	4-CHANNEL 20W at 8Ω (1 channel operation 1 kHz 0.5%)				-	
2-CHANNEL POWER DOUBLER			40W at 8Ω (1 channel operation 1 kHz 0.5%)			
FREQUENCY RESPONSE		PHONO	100 Hz 13.5±1.5 dB			
			10 kHz -13.5±1.5 d	lB		
AUX			20 Hz/-2.0 dB, 50 l	kHz/-3.0 dB		
POWER BAND WIDTH			10 Hz to 50 kHz at	8Ω		
INPUT SENSITIVITY		PHONO	3 mV (-47.5±1.5 d)	B)		
		MIC	3 mV (-47.5±1.5 dl	B)		
		AUX	170 mV (-13±1.5 d	B)		
		TAPE 1	170 mV (-13±1.5 d	B)		
		TAPE 2	150 mV (-14.5±1.5	dB)		
		CD-4	150 mV (-14.5±1.5	dB)	•	
SIGNAL TO NOISE RATIO		PHONO	Better than 35 dB			
		MIC	Better than 35 dB			
	AUX-DI	SC 4 CH	Better than 40 dB			
		AUX-SQ	Better than 35 dB			
	T.	APE 1, 2	Better than 40 dB			
CD-4			Better than 40 dB			
RESIDUAL NOISE			Less than 4.3 mV (Less than -45 dB)			
TONE CONTROL BASS			10±1.5 dB at 100 Hz	-		
			-10±1.5 dB at 100 l			
		TREBLE	10±1.5 dB at 10 kHz			
			-10±1.5 dB at 10 kl	Hz		
LOUDNESS CONTROL			8±2 dB at 100 Hz			
			4.5±2 dB at 10 kHz			
CROSS TALK			Better than 50 dB			
LEFT-RIGHT DEVIATION			Within 3 dB			
FRONT-REAR DEVIATION			Within 3 dB			
RECORDING OUTPUT	TAP	E 1 DIN	34 mV (-27±1.5 dB			
		PIN	170 mV (-13±1.5 d	•		
TAPE 2 PIN			150 mV (-14.5±1.5 dB)			
DISTORTION FACTOR			Less than 0.1% (8Ω	10W output)		
§ SQ SECTION						
	I	nput	F.L	F.R	R.L	R.R
CROSS TALK	F.L	1 kHz	0±2 dB	-15±2 dB	-2.5±2 dB	-2.5±2 dB
CROSS TALK	F.R	1 kHz	-15±2 dB	0±2 dB	-2.5±2 dB	-2.5±2 dB
PHASE DEVIATION	F.L	1 kHz	0°		-115±20°	

	I	nput	F.L	F.R	R.L	R.R
CD OCC TAILY	F.L	1 kHz	0±2 dB	-15±2 dB	-2.5±2 dB	-2.5±2 dB
CROSS TALK	F.R	1 kHz	-15±2 dB	0±2 dB	$-2.5\pm 2 \text{ dB}$	-2.5±2 dB
DUAGE DEVIATION	F.L	1 kHz	0°		-115±20°	
PHASE DEVIATION	F.R	1 kHz		0°		+65±20°

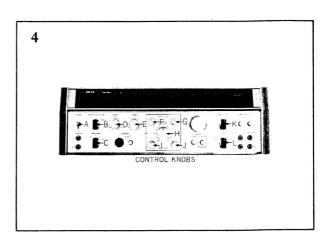
§ FM SECTION

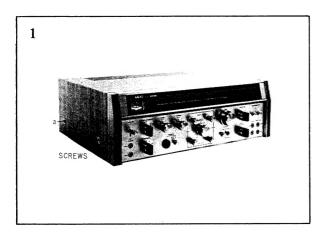
	I	nput	F.L	F.R	R.L	R.R
CROSS TALK	F.L	1 kHz	0±2 dB	-12±2 dB	-1±2 dB	-6±2 dB
CROSS TALK	F.R	1 kHz	-12±2 dB	0±2 dB	-6±2 dB	-1±2 dB
PHASE DEVIATION	F.L	1 kHz	0°		+90±20°	
	F.R	1 kHz		0°		-90±20°

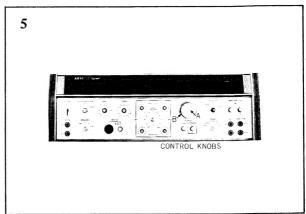
§ FM TUNER SECTION					
FREQUENCY RANGE	J 75 to 91±1 MHz				
	U 86 to 109±1 MHz				
DIAL TRACKING ERROR	±250 kHz				
SENSITIVITY (IHF)	2μV *Less than 4μV(Less than	12 dB)			
SENSITIVITY DEVIATION	Within 3 dB				
IMAGE REJECTION RATIO	65 dB *Better than 45 dB				
IF REJECTION RATIO	90 dB *Better than 60 dB				
SPURIOUS REJECTION RATIO	Better than 60 dB				
CAPTURE RATIO (IHF)	Less than 2 dB				
SELECTIVITY	65 dB *Better than 60 dB				
AM SUPPRESION RATIO	Better than 45 dB				
SIGNAL TO NOISE RATIO MONAURAL	70 dB *Better than 55 dB				
STEREO	Better than 45 dB				
DISTORTION FACTOR MONAURAL	0.4% *Less than 0.5%				
STEREO	0.4% *Less than 0.5% 0.8% *Less than 2.0%				
	J -11±1.5 dB at 10 kHz				
FREQUENCY RESPONSE	U -13.0 dB at 10 kHz				
CTEDEO CENCITIVITY					
STEREO SENSITIVITY	45 µV (33±3 dB)				
STEREO INDICATOR SENSITIVITY	32 µV (30±3 dB)				
STEREO SEPARATION	40 dB *Better than 33 dB				
REJECTION RATIO	Better than 45 dB				
L-R DEVIATION	Within 3 dB				
RECORDING OUTPUT PIN	170 mV (-13±1.5 dB)				
DIN	35 mV (-27±1.5 dB)				
§ AM TUNER SECTION					
FREQUENCY RANGE	525±5 kHz to 1,650±20 kHz				
DIAL TRACKING ERROR	Within 2%				
SENSITIVITY (IHF)	250 μV *Less than 350 μV (Le	ess than 50 dB)			
SENSITIVITY DEVIATION	Within 6 dB				
IMAGE REJECTION RATIO	55 dB *Better than 50 dB				
IF REJECTION RATIO	Better than 45 dB				
SELECTIVITY	Better than 30 dB				
SIGNAL TO NOISE RATIO	50 dB *Better than 40 dB				
DISTORTION FACTOR	Less than 1.5%				
FREQUENCY RESPONSE	-15 dB at 3 kHz				
§ OTHER					
	2SA684 4	2SC945 (P) (Q) (R) 4			
Transistors	2SA733 (P) (Q) (R) 1	2SC1312 (F) (G) 20			
	2SC4543	2SC1318 (P) (Q) 4			
	1	2SC1318 (F) (Q) 4 2SC1384 (Q) (R) 4			
	2SC839 (E) (F) 4				
1.0	2SC9221	2SD313 (E) (F) 9			
I.C.	LA-3300 1	TA-7061AP1			
DIODES	1N34A3	10D1 12			
	1N606	HIFI 400V 3A 4			
ZENER DIODES	WZ-120 1	WZ-130 1			
VARISTORS	STV-3H4				
POWER SOURCE	100 to 240V A.C. 50/60 Hz				
	120V A.C. 60 Hz (CSA Models)				
POWER CONSUMPTION	300W/4Ω (at maximum output	t)			
	160W/4Ω (at 1/3 output)				
DIMENSIONS	480 (W)x168(H)x402(D) mm (18.9"x6.6"x15.8")				
WEIGHT	13.06 kg (28.7 lbs.)				

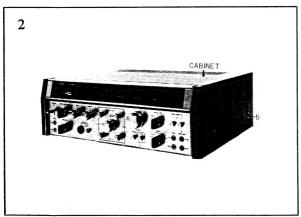
NOTE: Specifications subject to change without notice.

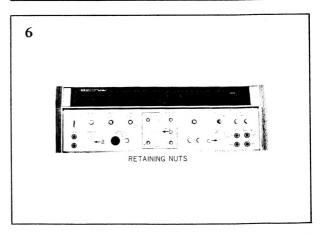
In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

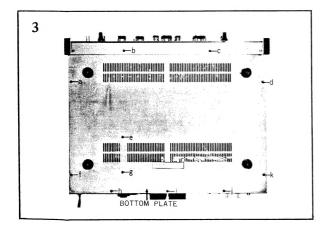


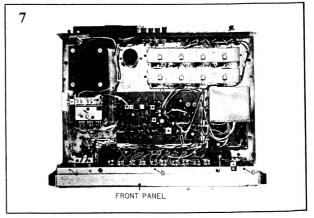












III. ARRANGEMENT OF MAIN PARTS

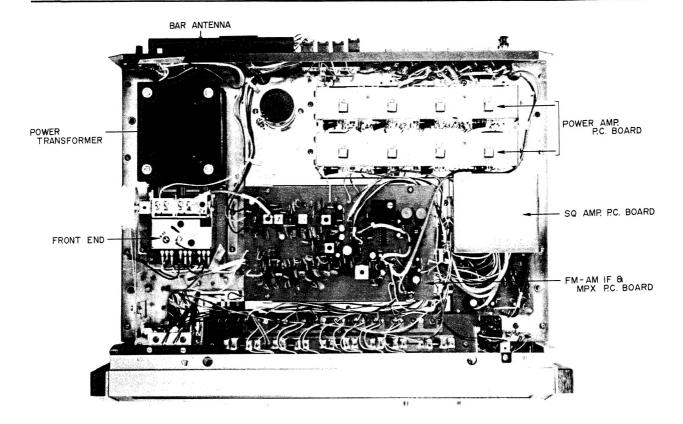


Fig. 1

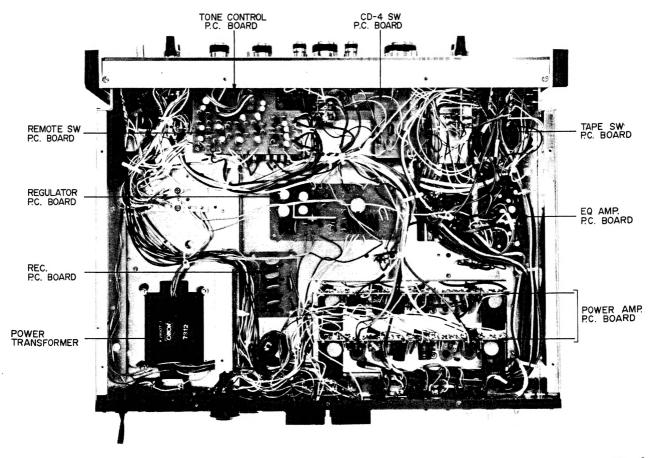


Fig. 2

IV. NECESSARY MEASURING INSTRUMENTS

Measuring Instrument	Model	For
AM-FM Radio IF Genescope	Meguro MSW-721C	FM and AM IF Adjustment
FM Standard Signal Generator	Meguro MSG-278G	FM Tracking, Sensitivity Adjustment
FM Stereo Modulator	Meguro MSG-211E	Stereo Separation Adjustment
AM Standard Signal Generator	Meguro MSG221C	AM Tracking, Sensitivity Adjustment
AM Loop Antenna	Meguro MLA-1001B	AM Tracking, Sensitivity Adjustment
High Sensitivity V.T.V.M.	Kikusui 183E	Sensitivity, Stereo Separation Adjustment
Distortion Meter	Shibasoku 760C	Sensitivity Adjustment
Ampere Meter	Yokogawa 2011	Power Amp. Adjustment

Chart 1

V. CLASSIFICATION OF VARIOUS P.C. BOARDS AND INTERCHANGEABILITY

P.C. Poord			M	lodel	
P.C. Board		AS-980	AS-970	AA-910	AA-910DB
TAPE SWITCH P.C. BOARD	96-5001	98-5002	97-5004		
CD-4 SWITCH P.C. BOARD	96-5003	98-5004	97-5003		
EQ. AMP. P.C. BOARD	96-5004	98-5008	98-5008	91-5034	91-5034
LOUDNESS P.C. BOARD	96-5005	98-5016			
TONE CONTROL P.C. BOARD	96-5006	98-5007	98-5007	91-5036	91-5036
FRONT END P.C. BOARD	96-5007				
POWER AMP. P.C. BOARD	96-5008	92-5005	97-5009	91-5030	91-5030
RECT. P.C. BOARD	98-5010	98-5010	98-5010		
HEAD PHONE P.C. BOARD	98-5012	98-5012	98-5012		
DUB. P.C. BOARD	98-5013	98-5013			
MIC. P.C. BOARD	98-5059	98-5059			
REGULATOR P.C. BOARD	98-5084	98-5084*	98-5084*		
DIAL ILLUMINATION P.C. BOARD	97-5008	98-5001	97-5008	91-5035	91-5035
SQ AMP. P.C. BOARD	97-5010	98-5015	97-5010		
FM-AM IF & MPX. P.C. BOARD	91-5033			91-5033	91-5033

NOTE: * . . . No interchangeable

Chart 2

VI. FM TUNER SECTION ADJUSTMENTS

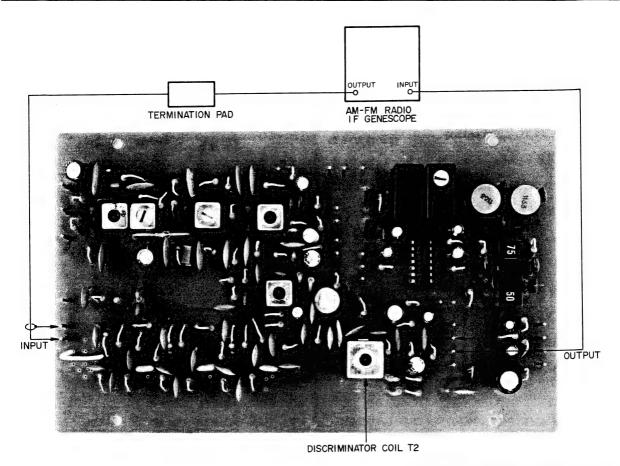


Fig. 3 INSTRUMENT CONNECTIONS

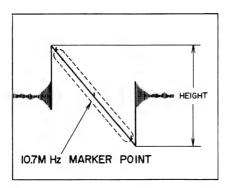
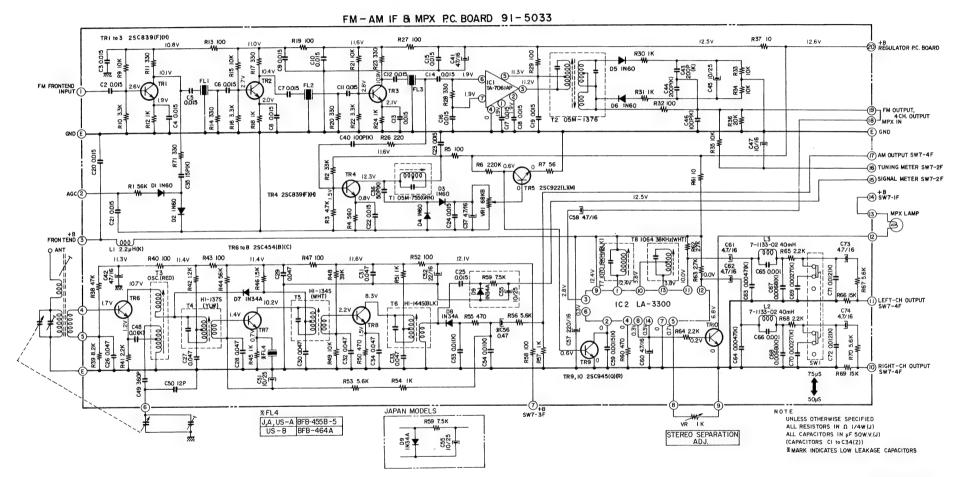


Fig. 4 S Curve

Vertical Gain	0.3Vp-p to 1 cm
Genesco Output Level	50 to 60 dB
Discriminator Coil	T2
S Curve Height	5 to 6 cm

Chart 3



SCHEMATIC 1

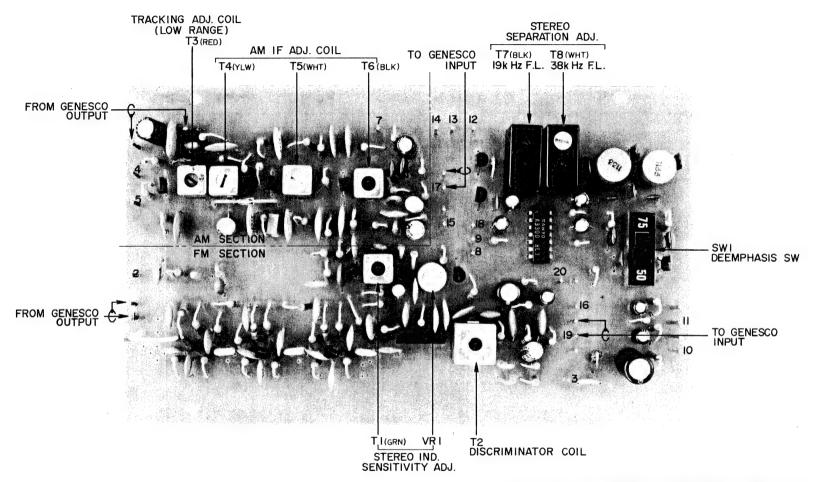
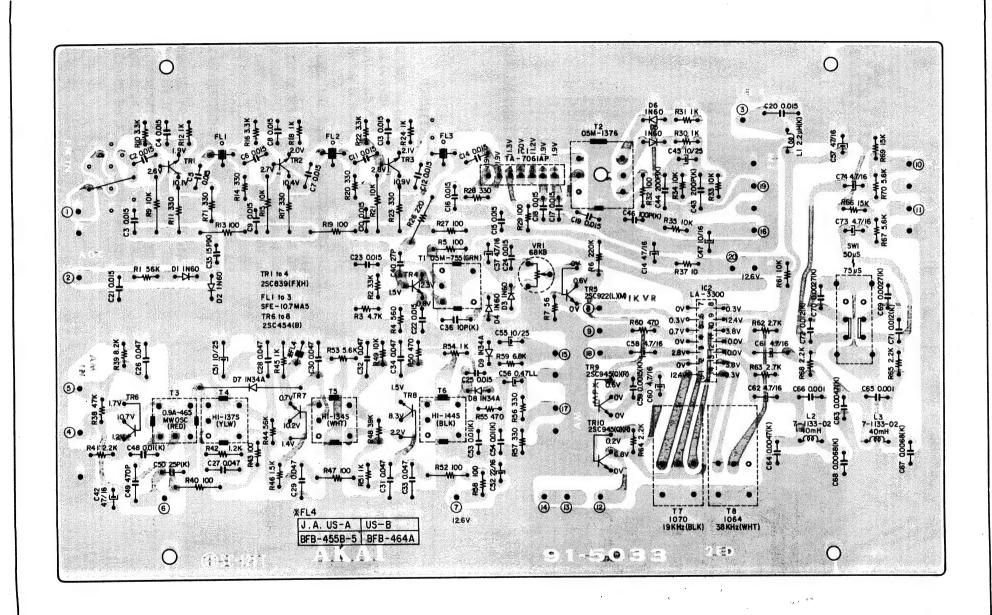


Fig. 5 FM-AM IF & MPX P.C. BOARD 91-5033 (Face)



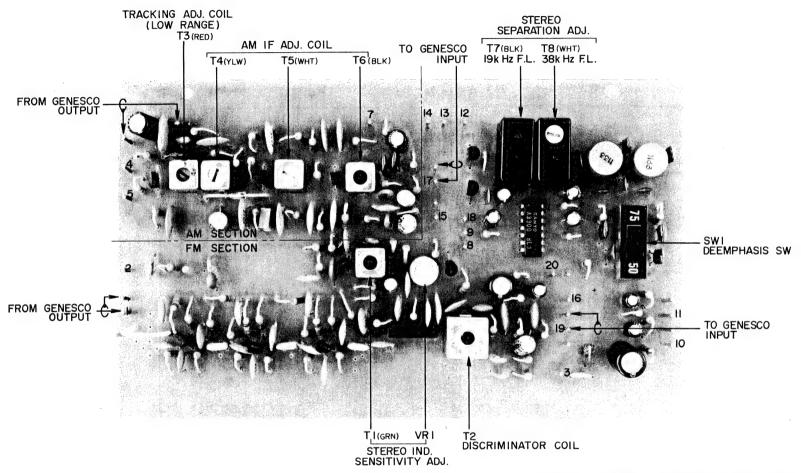


Fig. 5 FM-AM IF & MPX P.C. BOARD 91-5033 (Face)

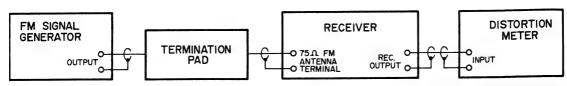
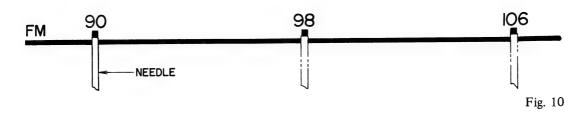


Fig. 9 INSTRUMENT CONNECTIONS

Ref. In making Tracking Adjustments, set dial to following positions.



2. FRONT END AND FM IF MATCHING ADJUSTMENT

- 1) Connect the GENESCO lead wires to the 75Ω FM ANTENNA TERMINALS of the Receiver as well as to the FM-AM IF & MPX P.C. Board output as shown in Fig. 7.
- 2) Set the GENESCO to FM mode and adjust the V gain of GENESCO to obtain a 10 mm amplitude of the 0.3Vp-p calibration voltage on GENESCO screen and set the attenuator to 100 dB.
- Set Receiver SELECTOR to FM AUTO, and set the tuning indicator needle to extreme right end of the dial.
- 4) Adjust the upper core of Front End IF Coil (see Fig. 16) to obtain maximum wave height value of S Curve in Fig. 8, and adjust the lower core to obtain maximum noise level.
- 5) Make this adjustment again following FM Sensitivity Adjustment.

FM S.G. Output	46 dB
Core (low range)	Lo
Trimmer Condenser (high range)	TCo

Chart 4

3. TRACKING ADJUSTMENT

- Connect the various measuring instruments as shown in Fig. 9.
- 2) Set the oscillation frequency of the FM SIGNAL GENERATOR (hereinafter referred to FM S.G.) to 90 MHz (400 Hz 100% internal modulation), and set the output of the FM S.G. to 46 dB. (Refer to Chart 4)
- 3) Set Receiver SELECTOR to FM AUTO, and set the tuning indicator needle to 90 MHz. (Refer to Fig. 10)
- 4) Adjust Coil Lo of Front End (Fig. 16) until the distortion meter level is maximum and the distortion factor is minimum. (Refer to Chart 4)
- 5) Set the oscillation frequency of FM S.G. and tuning indicator needle to 106 MHz. (Refer to Fig. 10)
- 6) Adjust Trimmer Condenser TCo of Front End (Fig. 16) until the distortion meter level is maximum and the distortion factor is minimum. (Refer to Chart 4)
- Repeat adjustments outlined in Items 2) through
 two or three times for minimum tracking error.

Core (low range)	LR
Trimmer Condenser (high range)	TCA, TCR
IF Coil (mid range)	IF
Discriminator Coil (mid range)	Т2

Chart 5

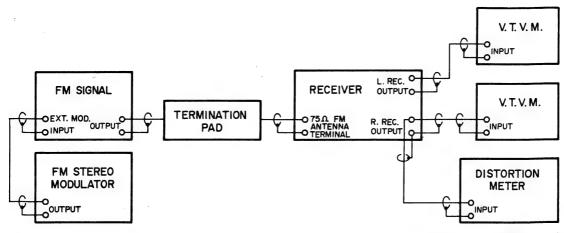


Fig. 11 INSTRUMENT CONNECTIONS

4. SENSITIVITY ADJUSTMENT

- Carry out these adjustments after the previously described Tracking Adjustments have been completed.
- Measuring instrument connections are the same as described in Tracking Adjustments.
- 3) Set the oscillation frequency of the FM S.G. to 90 MHz (400 Hz, 100% internal modulation), set Receiver Selector to FM-AUTO, and set the tuning indicator needle to 90 MHz. (Refer to Fig. 10)
- 4) Adjust the FM S.G. Attenuator to obtain a 3% distortion factor.
- 5) Adjust Coil LR of front end (Fig. 16), until the distortion meter level is maximum and the distortion factor is minimum. (Refer to Chart 5)
- 6) Set the oscillation frequency of FM S.G. and tuning indicator needle to 106 MHz. (Refer to Fig. 10)
- 7) Adjust the FM S.G. Attenuator to obtain a 3% distortion factor.
- 8) Adjust Trimmer Condensers TCA, TCR of front end (Fig. 16), until the distortion meter level is maximum and the distortion factor is minimum. (Refer to Chart 5)
- Set the oscillation frequency of FM S.G. and the tuning indicator needle to 98 MHz. (Refer to Fig. 10)
- 10) Adjust the FM S.G. Attenuator to obtain a 3% distortion factor.
- 11) Adjust the upper and lower core of IF Coil in front end (Fig. 16) and the lower core of FM-AM IF & MPX P.C. Board Discriminator Coil until the distortion meter level is maximum and the distortion factor is minimum. (Refer to Chart 5)
- 12) Repeat adjustments outlined in Items 3) through 11) at 90 MHz, 98 MHz, and 106 MHz two or three times for highest sensitivity.

5. STEREO SEPARATION ADJUSTMENT

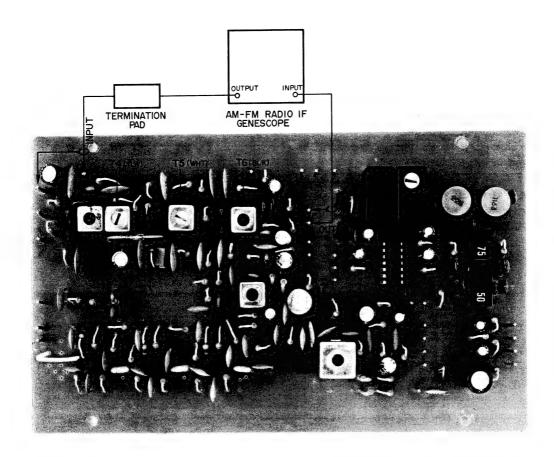
- 1) Connect the various measuring instruments as shown in Fig. 11.
- 2) Set the FM STEREO MODULATOR pilot signal 19 kHz to 10%, and the main signal 400 Hz (left channel + right channel) to 90% modulation, and supply this composite signal (ratio 9:1) to the EXT MOD input terminal of the FM S.G.
- 3) Set the oscillation frequency of the FM S.G. to 98 MHz, and the attenuator to 66 dB.
- Set Receiver SELECTOR to FM AUTO and the tuning indicator needle to 98 MHz to receive the FM S.G. Signal.
- 5) Set the output signal selector of FM STEREO MODULATOR to SUB.
- 6) Adjust the cores of FM-AM IF & MPX P.C. BOARD 19 kHz Filter T7(BLK), and 38 kHz Filter T8(WHT) until the distortion factor is minimum. (Refer to Fig. 5)
- 7) Set the output signal selector of FM STEREO MODULATOR to left channel.
- Adjust the MPX Adjustment Volume located on rear panel of the Receiver until the right channel output level is minimum.

6. TUNING METER CENTER ADJUSTMENT

After completing the adjustments outlined in Parts 1 through 4 of this manual, set the FM S.G. Attenuator to non-output condition, and adjust the upper core of FM-AM IF & MPX P.C. Board Discriminator Coil T2 shown in Fig. 5 until the tuning indicator needle of tuning meter comes to the center. Then set Receiver dial to 98 MHz, supply a 98 MHz (400 Hz, 100% internal modulation) 66 dB signal from the FM S.G. and fine adjust the lower core of Discriminator Coil T2 for minimum distortion factor.

7. STEREO INDICATOR SENSITIVITY ADJUSTMENT (MUTING LEVEL ADJUSTMENT)

- 1) Connect the various measuring instruments as shown in Fig. 11.
- 2) Set the FM S.G. oscillation frequency to 98 MHz (400 Hz, 100% internal modulation) and Attenuator to non-output condition.
- 3) Set Receiver dial to 98 MHz. (There will be no output at either channel)
- 4) Adjust FM-AM IF & MPX P.C. Board Semi-fixed Resistor VR1 68 kB so that when the attenuation decreases and the Attenuator scale is at 30 dB signal output is emitted at both channels.



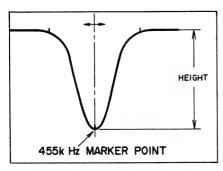


Fig. 13

Fig. 12 INSTRUMENT CONNECTIONS

Vertical Gain	0.3Vp-p to 3 cm
GENESCO Output Level	96 dB
Single Peaked Curve Height	2 cm

Chart 6

1. AM IF CIRCUIT ADJUSTMENT

- 1) Connect the AM-FM Radio IF GENESCOPE (hereinafter referred to as GENESCO) lead wires to input terminal as well as output terminal of the FM-AM IF & MPX P.C. Board as shown in Fig. 12.
- 2) Set GENESCO to AM mode and adjust vertical gain. (Refer to Chart 6)
- Set Receiver SELECTOR to AM and set the tuning indicator needle to extreme right end of dial.

NOTE: A Noise Element should not enter the single peaked curve shown in Fig. 13.

- 4) Adjust output level of GENESCO. (Refer to Chart 6)
- 5) Adjust the core of FM-AM IF & MPX P.C. Board IFT T6(BLK) (Refer to Fig. 5) so that the 455 kHz marker point of the single peaked curve displays maximum amplitude as shown in Fig. 13.
- 6) Adjust the cores of FM-AM IF & MPX P.C. Board IFT T5(WHT), T4(YLW) (refer to Fig. 5) so that the left and right rise up characteristics of the single peaked curve shown in Fig. 13 are identical from the center (indicated by the dotted line in the figure).
- 7) In making this adjustment, the single peaked curve marker point will differ according to the rank of the ceramic filter.

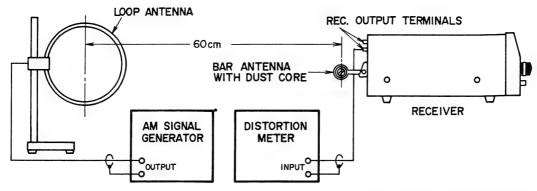
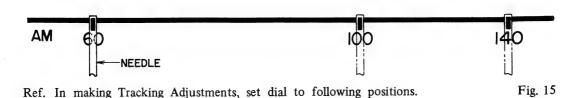


Fig. 14 INSTRUMENT CONNECTIONS



AM S.G. Output	60 dB
Core (low range)	T3 (RED)
Trimmer Condenser (high range)	TC1

Chart 7

Bar Antenna Dust Core (low range)	ANT1
Trimmer Condenser (high range)	TC2

Chart 8

2. TRACKING ADJUSTMENT

- 1) Connect the various measuring instruments as shown in Fig. 14.
- 2) Set the oscillation frequency of the AM SIGNAL GENERATOR (hereinafter referred to as AM S.G.) to 600 kHz (400 Hz 30% internal modulation) and adjust the AM S.G. Attenuator. (Refer to Chart 7)
- 3) Set Receiver SELECTOR to AM and set the tuning indicator needle to 600 kHz. (Refer to Fig. 15)
- 4) Adjust the core of FM-AM IF & MPX P.C. Board Tracking Adjustment Coil T3 (RED) in Fig. 5 until the distortion meter level is maximum and the distortion factor is minimum.
- 5) Set the oscillation frequency of AM S.G. and tuning indicator needle of Receiver to 1,400 kHz. (Refer to Fig. 15)
- 6) Adjust front end Trimmer Condenser TC1 in Fig. 16 until the distortion meter level is maximum and the distortion factor is minimum. (Refer to Chart 7)
- 7) Repeat adjustments outlined in Items 2) through6) two or three times for minimum tracking error.

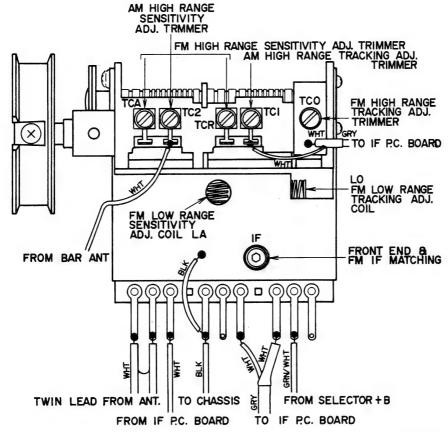
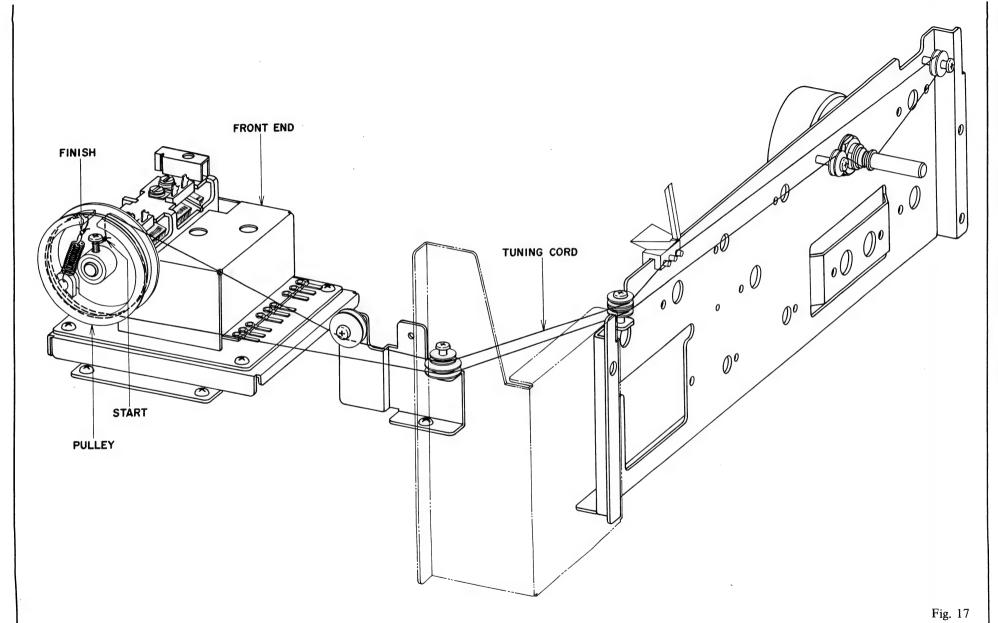


Fig. 16

3. SENSITIVITY ADJUSTMENT

- Carry out these adjustments after the previously described Tracking Adjustments have been completed.
- Measuring instrument connections are the same as described in Tracking Adjustments. (Refer to Fig. 14)
- 3) Set the oscillation frequency of the AM S.G. to 600 kHz (400 Hz, 30% internal modulation). Set Receiver SELECTOR to AM and the tuning indicator needle to 600 kHz. (Refer to Fig. 15)
- 4) Adjust AM S.G. Attenuator to obtain a 10% distortion factor.
- 5) Adjust dust core of Bar Antenna shown in Fig. 14 until the distortion meter level is maximum and the distortion factor is minimum.
- Set the oscillation frequency of AM S.G. and Tuning indicator needle to 1,400 kHz. (Refer to Fig. 15)
- 7) Adjust AM S.G. Attenuator to obtain a 10% distortion factor.
- 8) Adjust front end Trimmer Condenser TC2 in Fig. 16 until the distortion meter level is maximum and the distortion factor is minimum. (Refer to Chart 8)
- Repeat adjustments outlined in Items 3) through
 at 600 kHz and 1,400 kHz two or three times for highest sensitivity.



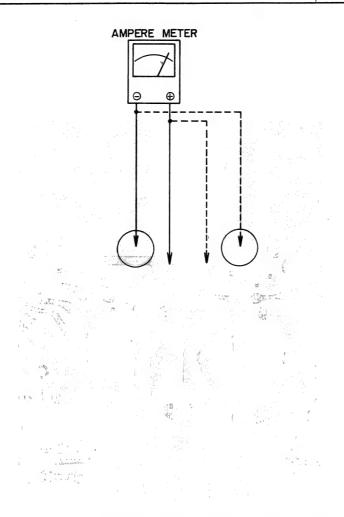


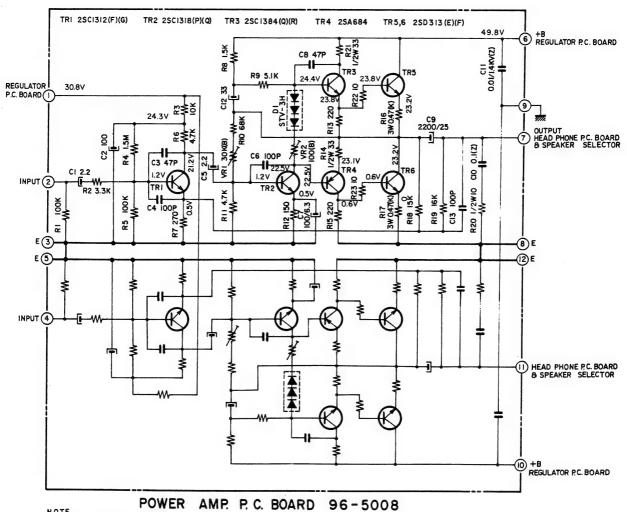
Fig. 18 O INDICATES SOLDERING POINTS

1. CURRENT ADJUSTMENT AT NON-INPUT

- * Turn Volume Control to minimum and proceed as follows:
- 1) Remove solder from soldering point of Power Amp. P.C. Board shown in Fig. 18.
- 2) Connect a 50 to 100 mA scale Ampere Meter as shown in Fig. 18.(Be sure to match Ampere Meter polarities)
- Adjust Power Amp. P.C. Board semi-fixed resistor VR2 100B shown in Fig. 19 to obtain an Ampere Meter indication of 40 mA.

2. VOLTAGE ADJUSTMENT BETWEEN POWER TRANSISTORS C-E

- * Refer to Schematic Diagram
- 1) Connect Voltage Meter to Power Amp. P.C. Board TR6 Collector and terminal 8 shown in Fig. 19.
- 2) Adjust Power Amp. P.C. Board semi-fixed resistor VR1 30 kB shown in Fig. 19 so that the Voltage Meter indication is 1/2 of the supply voltage value.



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN \(\Omega \) 1/4W(J)
ALL CAPACITORS IN \(\psi \) 50W.V.(J)

SCHEMATIC 2

23

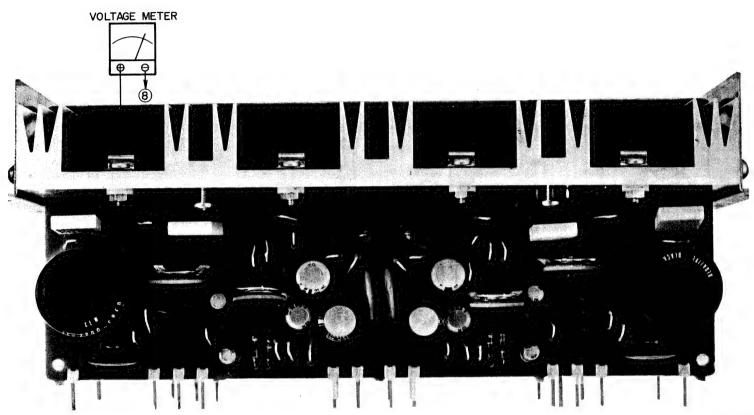


Fig. 19

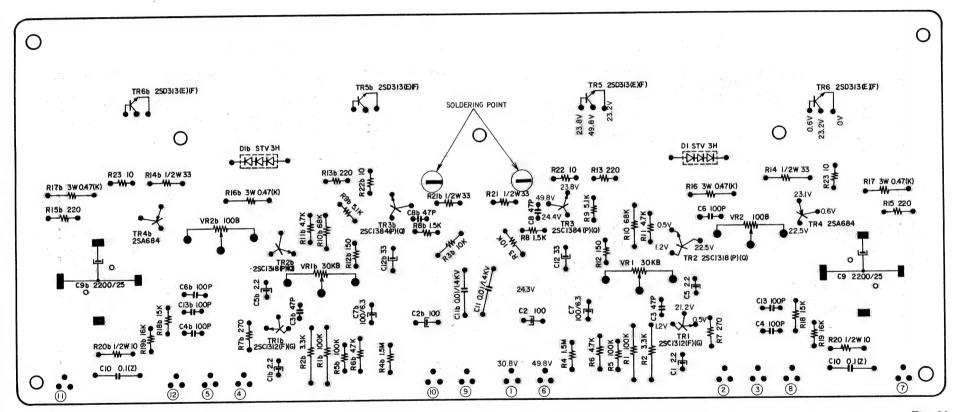
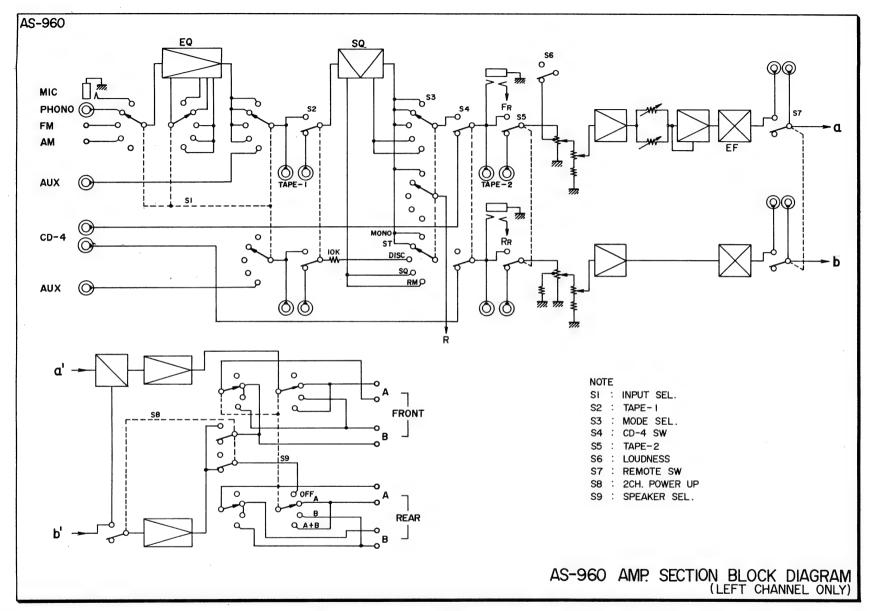


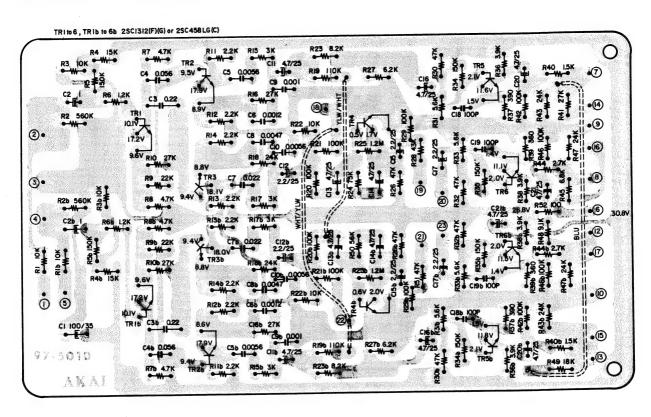
Fig. 20



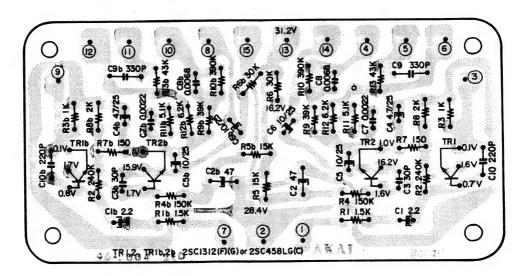
AS-960 AMPLIFIER SECTION BLOCK DIAGRAM (Left Channel Only)

X. COMPOSITE VIEWS OF COMPONENTS

1. SQ P.C. BOARD 97-5010

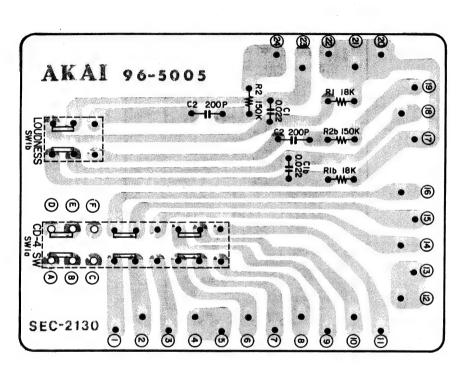


2. EQ AMP. P.C. BOARD 96-5004

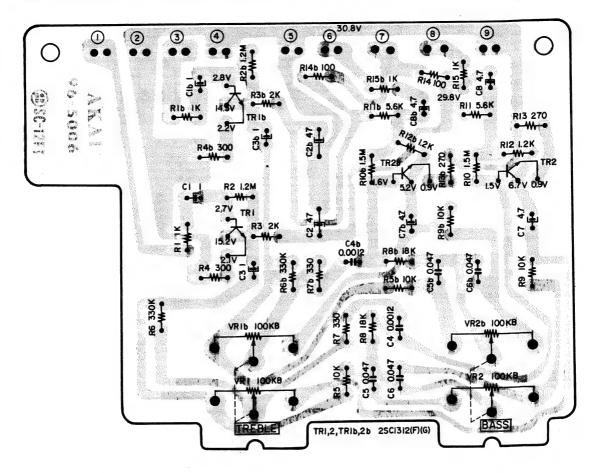


 $\dot{\omega}$

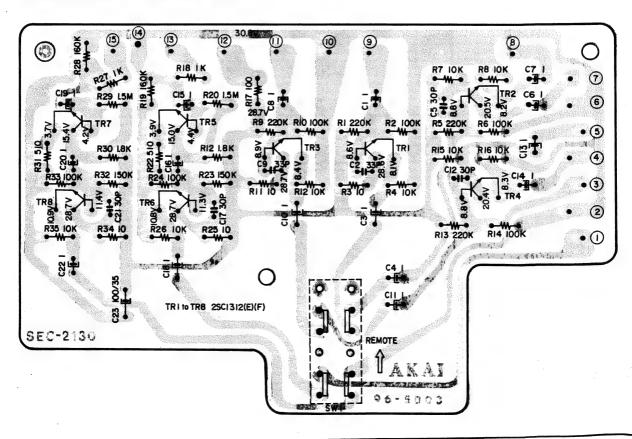
. LOUDNESS SW. P.C. BOARD 96-5005



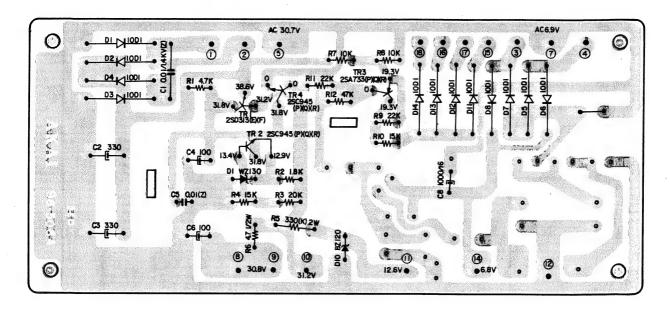
5. TONE CONTROL P.C. BOARD 96-5006



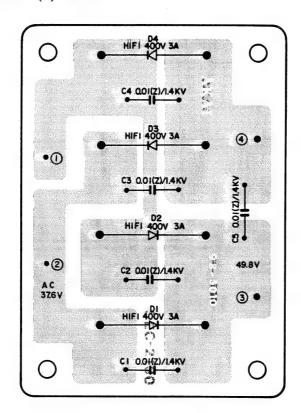
6. REMOTE SW. P.C. BOARD 96-5003



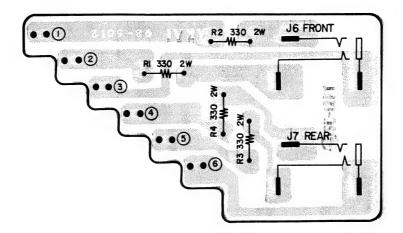
7. REGULATOR P.C. BOARD 98-5084



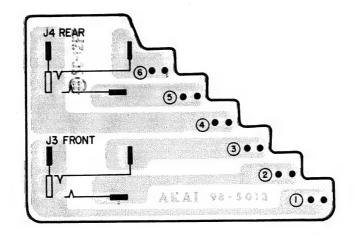
8. RECTIFIER P.C. BOARD (1) 98-5010



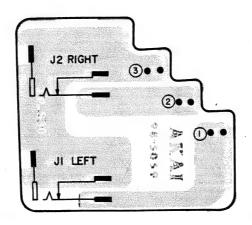
9. HEAD PHONE P.C. BOARD 98-5012



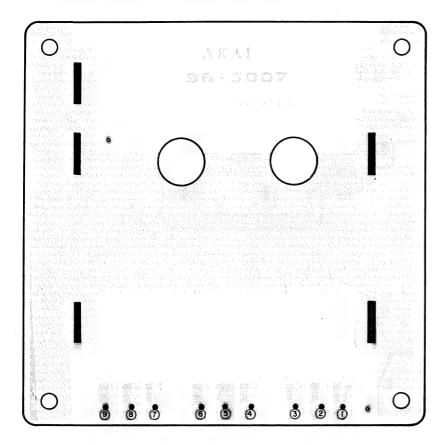
10. DUB P.C. BOARD 98-5013



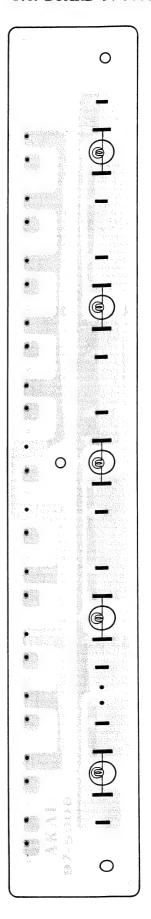
11. MIC P.C. BOARD 98-5059



12. FRONT END P.C. BOARD 96-5007



13. DIAL ILLUMINATION P.C. BOARD 97-5008



SECTION 2

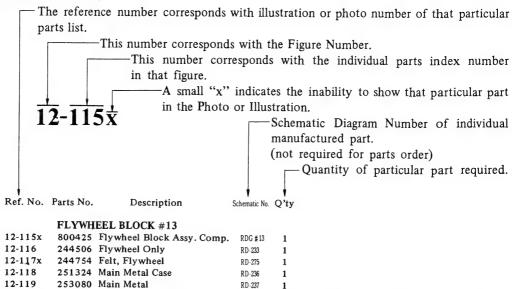
PARTS LIST

TABLE OF CONTENTS

Fig. 1	IF P.C. BOARD (91-5033) BLOCK
Fig. 2	SQ P.C. BOARD (97-5010) BLOCK
Fig. 3	MAIN AMP. P.C. BOARD (96-5008) BLOCK 39
Fig. 4	EQ. P.C. BOARD (96-5004) BLOCK 40
Fig. 5	REGULATOR P.C. BOARD (98-5084) BLOCK 41
Fig. 6	RECTIFIER P.C. BOARD (98-5010) BLOCK 42
Fig. 7	TONE P.C. BOARD (96-5006) BLOCK 43
Fig. 8	REMOTE P.C. BOARD (96-5003) BLOCK 44
Fig. 9	MIC, DUB P.C. BOARD (98-5059, 98-5013) BLOCK 45
Fig. 10	HP P.C. BOARD (98-5012) BLOCK
Fig. 11	LOUDNESS P.C. BOARD (96-5005) BLOCK 46
Fig. 12	TAPE P.C. BOARD (96-5001) BLOCK 46
Fig. 13	LAMP P.C. BOARD (97-5008) BLOCK
Fig. 14	FRONT CHASSIS/REAR PANEL BLOCK 48
Fig. 15	ASSEMBLY BLOCK 50
Fig. 16	FINAL ASSEMBLY BLOCK
INDEX	53

HOW TO USE THIS PARTS LIST

- 1. This parts list is compiled by various individual blocks based on assembly process.
- 2. When ordering parts, please describe parts number, serial number, and model number in detail.
- 3. How to read list.

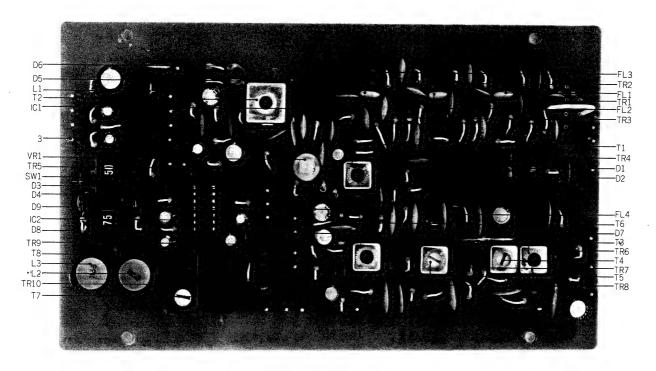


- 4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
- 5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
- 6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
- 7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
 - It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
- 8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

ELECTRICAL PARTS TABLE



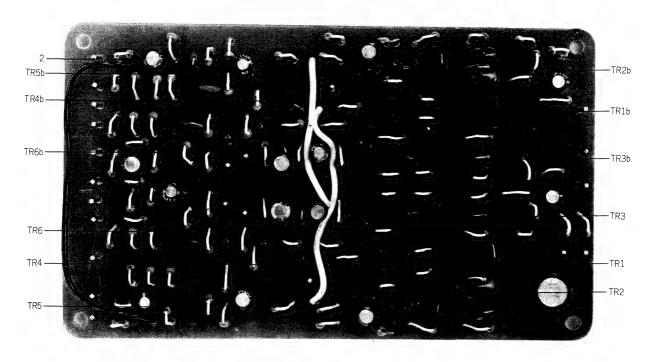
FIG. 1 PHOTO OF IF P.C. BOARD (91-5033) BLOCK



IF P.C. BOARD (91-5033) BLOCK

II I.U. D.	(>	1 0000) == -					
Symbol No.	Parts No.	Description	Q'ty	Symbol No.	Parts No.	Description	Q'ty
	D. 4. # < 2.4.0.	IE D.C. Board Comp. (01 5033)	1			Resistor, Stopper Type	
1-1x		IF P.C. Board Comp. (91-5033)	1	1-R1	ER361528	Carbon RD1/4 56k(J)	1
1-2x	BA563861	IF P.C. Board Comp. (91-5033)		1-R1 1-R2	ER349907	Carbon RD1/4 33k(J)	1
		(US-B)		1-R3	ER212883		1
1-IC1	EI485291	I.C TA-7061AP	1		ER363644		1
1-IC2	EI443744	I.C LA-3300	1	1-R4	ER303044 ER211667	- · · · · · · · · · · · · · · · ·	1
1-TR1 to 4	ET554016	Transistor 2SC839 (F) (H)	4	1-R5		Carbon RD1/4 220k(J)	1
1-TR5	ET510693	Transistor 2SC922 (L) (M)	1	1-R6	ER380711	Carbon RD1/4 56(J)	1
1-TR6 to 8	ET591366	Transistor 2SC454 (B) (C)	3	1-R7	ER213120	Carbon RD1/4 10k(J)	1
1-TR9, 10	ET398711	Transistor 2SC945 (Q) (R)	2	1-R9	ER330442	Carbon RD1/4 3.3k(J)	1
1-D1 to 6	ED428264	Germanium Diode 1N60	6	1-R10	ER2124//	Carbon RD1/4 330(J)	1
1-D7 to 9	ED219464	Germanium Diode 1N34A	3	1-R11	ER212001	Carbon RD1/4 1k(J)	1
1-FL1 to 3	ER539818	Filter SFE-10.7MA5	3	1-R12	ER211405	Carbon RD1/4 100(J)	1
1-FL4	ER380406	Filter BFB 455B-5	1	1-R13			1
1-FL4	ER380417	Filter BFB 464-A (US-B)	1	1-R14	ER212681		1
1-T1	EO443700	Coil 05M-755 (Green) (10.7MHz	2) 1	1-R15	ER336442	Carbon RD1/4 10k(J)	î
1-T2	EO537232	Discri Coil 05M-1376	1	1-R16		Carbon RD1/4 3.3k(J)	1
1-T3	BT427915	AM OSC. Trans. ET-OSC	1	1-R17	ER212681		1
1-T4	BT379991	Trans. HI-137S (Yellow)	1	1-R18		Carbon RD1/4 1k(J)	1
1-T5	BT380384	Trans. HI-134S (White)	1	1-R19		Carbon RD1/4 100(J)	1
1-T6	BT443610	Trans. HI-144S (Black)	1	1-R20		Carbon RD1/4 330(J)	1
1-T7	EO443766	Coil (19KC) 02-1070-03 1070		1-R21	ER336442		1
'		(Black)	1	1-R22	ER212477		
1-T8	EO443777	Coil (38KC) 02-1064-03 1064		1-R23	ER212681	Carbon RD1/4 330(J)	1
1 10		(White)) 1	1-R24	ER211465		1
1-L1	EO539820	Peaking Coil 2.2µH(K)	1	1-R26	ER357412		1
1-L2, 3	EO445788	Choke Coil 7-1133-02 L=40MH	2	1-R27	ER211667		1
1-VR1	EV539831	Semi-fixed/Vol. SR19R-68 kH		1-R28	ER212681	Carbon RD1/4 330(J)	1
1-41(1	21337031	(Solid Type) 1	1-R29	ER211667	Carbon RD1/4 100(J)	1
1-SW1	ES513922	Slide SW. SSB02242	1	1-R30, 31	ER211465	Carbon RD1/4 1k(J)	2
	EJ539662	Wrapping Post 1x17	28	1-R32	ER211667	Carbon RD1/4 100(J)	1
1-3	13339002	Wiapping 1 out 1 mi.		1-R33 to 35	ER336442		3
		Capacitor, Vertical Type		1-R36	ER349828	Carbon RD1/4 20k(J)	1
1 (0) 4= 0.5	EC404256	Ceramic DD610YM 0.015µF		1-R37	ER304290		1
1-C2 to 25	EC404230	(Z) 50W\	/ 24	1-R38	ER346601	Carbon RD1/4 47k(J)	1
1 000 4- 34	EC402142			1-R39	ER349942	Carbon RD1/4 8.2k(J)	1
1-C26 to 34	EC492142	(Z) 50W	<i>I</i> 9	1-R40	ER211667	(T)	1
	EC442654		1	1-R41	ER357456	(Y)	1
1-C35	EC443654		1	1-R42	ER306843		1
1-C36	EC357827		1	1-R43	ER211667		1
1-C37	EC350706		1	1-R44	ER361528		1
1-C40	EC290531		2	1-R45	ER211465	- · · · · · · · · · · · · · · · · ·	1
1-C41, 42	EC320040		2	1-R46	ER211320		1
1-C43, 44	EC539842		1	1-R47	ER211667		1
1-C45	EC220994				ER357535	(T)	1
1-C46	EC290531		1	1-R48	ER336442	(T)	1
1-C47	EC320051		1	1-R49	ER304402	(1)	1
1-C48	EC250885		1	1-R50	ER211465	(T)	1
1-C49	EC427937		1	1-R51		Carbon RD1/4 100(J)	1
1-C50	EC419231	* *	1	1-R52			1
1-C51	EC220994		1	1-R53	ER213030		1
1-C52	EC331705		1	1-R54	ER211465 ER304402		1
1-C53, 54	EC250885		2	1-R55			1
1-C55	EC220994		1	1-R56	ER213030	· · · · · · · · · · · · · · · · ·	1
1-C56	EC432808		1	1-R57	ER212681		1
1-C57	EC321208	Elect. 220μF 16WV	1	1-R58	ER211667	/->	1
1-C58	EC350706	Elect. 4.7μF 16WV	1	1-R59	ER420232		1
1-C59	EC250661	Mylar 0.0015μF(K) 50WV	1	1-R60	ER304402		1
1-C60 to 62	EC350706		3	1-R61	ER304290		2
1-C63, 64	EC362158		2	1-R62, 63	ER343078		2
1-C65, 66	EC350875	Mylar 0.001μF(J) 50WV	2	1-R64, 65	ER357456		1
1-C67, 68	EC34282	Mylar 0.0068μF(K) 50WV	2	1-R66	ER306887		1
1-C69, 70	EC390633		2	1-R67	ER213030		1
1-C71, 72	EC250964		2	1-R68	ER357456		
1-C73, 74	EC35070		2	1-R69	ER306887		1
				1-R70	ER213030		1
				1-R71	ER212681	Carbon RD1/4 330(J)	•

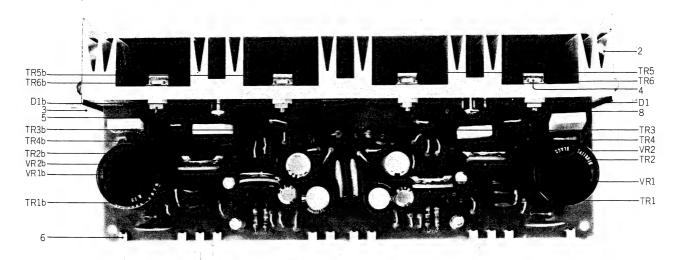
FIG. 2 PHOTO OF SQ P.C. BOARD (97-5010) BLOCK



SQ P.C. BOARD (97-5010) BLOCK

Symbol No.	Parts No.	Description	Q'ty	Symbol No.	Parts No.	Description	Q'ty
2-1x	BA562342	SQP.C. Board Comp. (97-5010)) 1	2-R17	ER346544	Carbon RD1/4 3k(J)	2
2-TR1 to 6	ET539987	Transistor 2SC1312 (F) (G)	12	2-R18	ER407316	Carbon RD1/4 24k(J)	2
2-2	EJ 539662	Wrapping Post 1x17	22	2-R19	ER379552	Carbon RD1/4 110k(J)	2
				2-R20, 21	ER211757	Carbon RD1/4 100k(J)	4
		Capacitor, Vertical Type		2-R22	ER336442	Carbon RD1/4 10k(J)	2
2-C1	EC455354	Elect. 100µF 35WV	1	2-R23	ER349942	Carbon RD1/4 8.2k(J)	2
2-C2	EC313108	Elect. 1µF 50WV	2	2-R24	ER362520	Carbon RD1/4 75k(J)	1
2-C3	EC538435	Mylar 0.22μF(J) 50WV	2	2-R25	ER423753	Carbon RD1/4 1.2M(J)	2
2-C4	EC368357	Mylar 0.056μF(J) 50WV	2	2-R26	ER346601	Carbon RD1/4 47k(J)	2
2-C5	EC329883	Mylar 0.0056µF(J) 50WV	2	2-R27	ER380755	Carbon RD1/4 6.2k(J)	2
2-C6	EC379721	Mylar 0.0012µF(J) 50WV	2	2-R28	ER419556	Carbon RD1/4 43k(J)	1
2-C7	EC368335	Mylar 0.022µF(J) 50WV	2	2-R29	ER211757	Carbon RD1/4 100k(J)	2
2-C8	EC337500	Mylar 0.0047µF(J) 50WV	2	2-R30	ER346601	Carbon RD1/4 47k(J)	2
2-C9	EC350875		2	2-R31	ER213030	Carbon RD1/4 5.6k(J)	
2-C10	EC329883	Mylar 0.0056µF(J) 50WV	2	2-R32	ER346601	Carbon RD1/4 47k(J)	2 2
2-C11	EC450527	Elect. 4.7μF 25WV	2	2-R33	ER213030	Carbon RD1/4 5.6k(J)	2
2-C12	EC522551	Tantalum 2.2µF(M) 25WV		2-R34, 35	ER357570	Carbon RD1/4 150k(J)	4
		(DTS Type) 2	2-R36	ER352045	Carbon RD1/4 3.9k(J)	2
2-C13, 14	EC450527	Elect. 4.7μF 25WV	4	2-R37	ER349784	Carbon RD1/4 390(J)	2
2-C15	EC522551	Tantalum 2.2 µF(M) 25WV		2-R38	ER352045	Carbon RD1/4 3.9k(J)	2
		(DTS Type) 2	2-R39	ER381723		2
2-C16	EC450527	Elect. 4.7μF 25WV	2	2-R40	ER211320	Carbon RD1/4 1.5k(J)	2 2
2-C17	EC522551	Tantalum 2.2µF(M) 25W		2-R41	ER342933	Carbon RD1/4 27k(J)	1
		(DTS Type) 2	2-R42	ER211757	Carbon RD1/4 100k(J)	2
2-C18, 19	EC290520	VFM 100PF(J) 50WV	4	2-R43	ER407316	Carbon RD1/4 24k(J)	2
2-C20, 21	EC450527	Elect. 4.7μF 25WV	4	2-R44	ER343078	Carbon RD1/4 2.7k(J)	2
				2-R45	ER306360	Carbon RD1/4 6.8k(J)	1
		Resistor, Stopper Type		2-R46	ER211757	Carbon RD1/4 100k(J)	2
2-R1	ER336442	Carbon RD1/4 10k(J)	2	2-R47	ER407316	Carbon RD1/4 24k(J)	2
2-R2	ER430086	Carbon RD1/4 560k(J)	2	2-R48	ER399060	Carbon RD1/4 9.1k(J)	1
2-R3	ER336442	Carbon RD1/4 10k(J)	2	2-R49	ER346994	Carbon Rd1/4 18k(J)	1
2-R4	ER306887		2	2-R50	ER361528		1
2-R5	ER357570	Carbon RD1/4 150k(J)	2	2-R51	ER346601	Carbon RD1/4 47k(J)	1
2-R6	ER306843	Carbon RD1/4 1.2k(J)	2	2-R52	ER211667		1
2-R7, 8	ER212883	Carbon RD1/4 4.7k(J)	4 .				
2-R9	ER212264	Carbon RD1/4 22k(J)	2				
2-R10	ER342933	Carbon RD1/4 27k(J)	2				
2-R11 to 14		Carbon RD1/4 2.2k(J)	8				
2-R15	ER346544	Carbon RD1/4 3k(J)	4				
2-R16	ER342933	Carbon RD1/4 27k(J)	2				

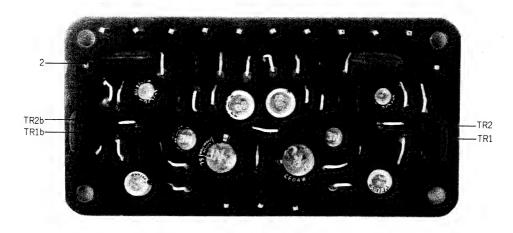
FIG. 3 PHOTO OF MAIN AMP. P.C. BOARD (96-5008) BLOCK



MAIN AMP. P.C. BOARD (96-5008) BLOCK

Symbol No.	Parts No.	Description	Q'ty	Symbol No.	Parts No.	Description Q)'ty
3-1x	BA570914	Main Amp. P.C. Board Comp.				Resistor, Stopper Type	
0 1.1		(96-5008)	1	3-R1	ER213715	Carbon RD1/4 100k(J)	
3-TR1	ET539987	Transistor 2SC1312 (F) (G)	2			(Insu. Type)	2
3-TR2, 3, 4	ET562858	Transistor 2SC1318 (P) (Q)	6	3-R2	ER364948	Carbon RD1/4 3.3k(J)	
3-TR5, 6	ET452531	Transistor 2SD313 (E) (F)	4			(Insu. Type)	2
3-D1	ED556514	Varistor STV-3H	2	3-R3	ER336442	Carbon RD1/4 10k(J)	2
3-VR1	EV383398	Semi-fixed/Vol. V18k3-2 30 kB		3-R4	ER430007	Carbon RD1/4 1.5M(J)	2
J- V ICI	2,000000	(4US)	2	3-R5	ER211757	Carbon RD1/4 100k(J)	2
3-VR2	EV409858	Semi-fixed/Vol. V18k3-2 100B		3-R6	ER212883	Carbon RD1/4 4.7k(J)	2
J- V I(2	21407000	(4US)	2	3-R7	ER347038	Carbon RD1/4 270(J)	2
3-2	EZ548234	Heat-sink Plate	1	3-R8	ER211320	Carbon RD1/4 1.5k(J)	2
3-3	AZ562836		4	3-R9	ER324202	Carbon RD1/4 5.1k(J)	2
3-4	ZS450832	ISO Screw, binding head 3x12	4	3-R10	ER350100	Carbon RD1/4 68k(J)	2
3-5		ISO Nut M3	4	3-R11	ER212883	Carbon RD1/4 4.7k(J)	2
3-6	EJ550012	Wrapping Terminal T5280	12	3-R12	ER212016	Carbon RD1/4 150(J)	2
3-7x	ZW426622		2	3-R13	ER357412	Carbon RD1/4 220(J)	2
3-8	ZS321298	ISO Screw, binding head 3x8	3	3-R14	ER380913	Carbon RD1/4 33(J)	2
5-0	20021270	iso seren, ememy men	-	3-R15	ER357412	Carbon RD1/4 220(J)	2
		Capacitor, Vertical Type		3-R16, 17	ER556064	Metal Plate MPC71F2 5W	
3-C1	EC354947	Elect. 2.2μF 50WV	2	,		0.47 (K)	4
3-C2	EC321221	Elect. 100µF 50WV	2	3-R18	ER306887	Carbon RD1/4 15k(J)	2
3-C3	EC377212	VFM 47PF(J) 50WV	2	3-R19	ER379596	Carbon RD1/4 16k(J)	2
3-C4	EC290520	VFM 100PF(J) 50WV	2	3-R20	ER452542	Carbon RD1/2 10(J) (Insu. Type)	2
3-C5	EC354947	Elect. 2.2µF 50WV	2	3-R21	ER556795	Carbon RD1/2 33(J)(Insu. Type)	
3-C6	EC290520	VFM 100PF(J) 50WV	2	3-R22, 23	ER304290	Carbon RD1/4 10(J)	4
3-C7	EC336104	3 7	2	,			
3-C8	EC377212	VFM 47PF(J) 50WV	2				
3-C9	EC562847	Elect. 2200µF 25WV (Lug Type)	2				
3-C10	EC228745	Ceramic DB209YZ 0.1µF(Z)					
		50WV	2				
3-C11	EC551160	Ceramic NB821YZ 0.01µF(Z)					
- 0		1.4kWV	2				
3-C12	EC373296		2				
3-C13	EC290520	VFM 100PF(J) 50WV	2				
		``					

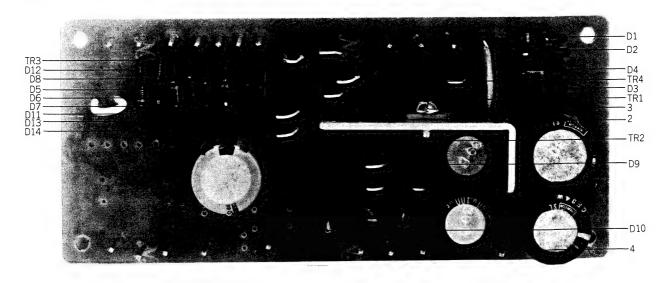
FIG. 4 PHOTO OF EQ. P.C. BOARD (96-5004) BLOCK



EQ. P.C. BOARD (96-5004) BLOCK

Symbol No.	Parts No.	Description	Q'ty
4-1x	BA563117	EQ. P.C. Board Comp. (96-5004)	1
4-TR1, 2	ET539987	Transistor 2SC1312 (F) (G)	4
4-2	EJ539662	Wrapping Post 1x17	15
		Capacitor, Vertical Type	
4-C1	EC483142	Elect. 2.2µF 50WV NL	2
4-C2	EC346735	Elect. 47µF 50WV	2
4-C3	EC476324	VFM 30PF(J) 50WV	2
4-C4	EC450527	Elect. 4.7μF 25WV	2
4-C5	EC220994	Elect. 10µF 25WV	2
4-C6	EC517138	Elect. 10µF 25WV NL	2
4-C7	EC250683	Mylar 0.0022µF(J) 50WV	2
4-C8	EC380621	Mylar 0.0068µF(J) 50WV	2
4-C9	EC336216	VFM 330PF(J) 50W	2
4-C10	EC329850	VFM 220PF(J) 50W	2
		Resistor, Stopper Type	
4-R1	ER211320	Carbon RD1/4 1.5k(J)	2
4-R2	ER443878	Carbon RD1/4 240k(J)	2
4-R3	ER211465	Carbon RD1/4 1k(J)	2
4-R4	ER357570	Carbon RD1/4 150k(J)	2
4-R5	ER306887	Carbon RD1/4 15k(J)	2
4-R6	ER379473	Carbon RD1/4 30k(J)	2
4-R7	ER212016	Carbon RD1/4 150(J)	2
4-R8	ER371946	Carbon RD1/4 2k(J)	2
4-R9	ER357535	Carbon RD1/4 39k(J)	2
4-R10	ER392850	Carbon RD1/4 390k(J)	2
4-R11	ER324202	Carbon RD1/4 5.1k(J)	2
4-R12	ER380755	Carbon RD1/4 6.2k(J)	2
4-R13	ER419556	Carbon RD1/4 43k(J)	2

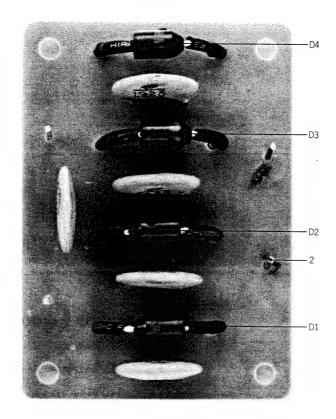
FIG. 5 PHOTO OF REGULATOR P.C. BOARD (98-5084) BLOCK



REGULATOR P.C. BOARD (98-5084) BLOCK

Symbol	Parts No.	Description	Q'ty
No.	Tarts 140.	Description	~ •,
5-1x	BA570407	Regulator P.C. Board Comp.	
		(98-5084)	1
5-TR1	ET557998	Transistor 2SC313 (E) (F)	1
5-TR2	ET517994	Transistor 2SC945(P)(Q)(R)(K)	1
5-TR3	ET539122	Transistor 2SA733(P)(Q)(R)	1
5-TR4	ET517994	Transistor 2SC945(P)(Q)(R)(K)	1
5-D1 to 8	ED224526	Silicon Diode 10D1	8
5-D9	ED539976	Zener Diode WZ-130	1
5-D10	ED562814	Zener Diode BZ-120	1
5-D11 to 14	ED224526	Silicon Diode 10D1	4
5-2	AA545117	Heat-sink	1
5-3	ZS447772	Tapping Screw #2 3x6 (BR)	1
5-4	EJ539662	Wrapping Post 1x17	19
5-5x	EJ558022	Hookup Terminal (T Type)	
		T-4410	5
		Capacitor, Vertical Type	
5-C1	EC551160	Ceramic NB821YZ 0.01µF (Z)	
		1.4kWV	1
5-C2, 3	EC403468	Elect. 330µF 50WV	2
5-C4	EC321221	Elect. 100µF 50WV	1
5-C5	EC557627	Ceramic DB203YZ 0.01µF (Z)	
		50W V	1
5-C6	EC321221	Elect. 100µF 50WV	1
5-C7	EC220127	Elect. 100µF 16WV	1
5-C8	EC336148	Elect. 1000µF 16WV	1
		Resistor, Stopper Type	
5-R1	ER212883	Carbon RD1/4 4.7k(J)	1
5-R2	ER362441	Carbon RD1/4 1.8k(J)	1
5-R3	ER349828	Carbon RD1/4 20k(J)	1
5-R4	ER306887	Carbon RD1/4 15k(J)	1
5-R5	ER559034	Metal Oxide Film 2W 330(K)	1
5-R6	ER536984	Carbon RD1/2 4.7 (J)	
		(Insu. Type)	
5-R7, 8	ER336442	Carbon RD1/4 10k(J)	2
5-R9	ER212264	Carbon RD1/4 22k(J)	2
5-R10	ER306887	Carbon RD1/4 15k(J)	1
5-R11	ER212264	Carbon RD1/4 22k(J)	2
5-R12	ER346601	Carbon RD1/4 47k(J)	1

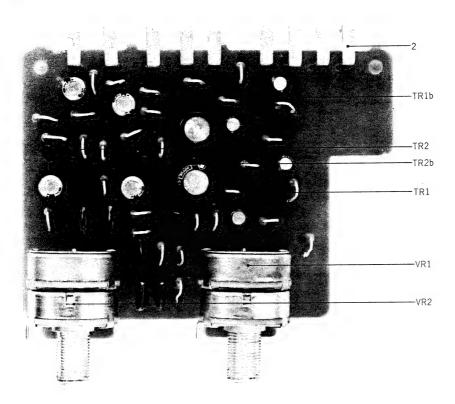
FIG. 6 PHOTO OF RECTIFIER P.C. BOARD (98-5010) BLOCK



RECTIFIER P.C. BOARD (98-5010) BLOCK

Symbol No.	Parts No.	Description	Q'ty
6-1x	BA560676	Rectifier P.C. Board Comp.	
		(98-5010)	1
6-D1 to 4	ED558033	Silicon Diode HIFI 400V 3A	
		(Special)	4
6-2	EJ539662	Wrapping Post 1x17	4
6-C1 to 5	EC551160	Ceramic/C. NB821YZ 0.01μ F(Z)	
		1 4kWV	- 5

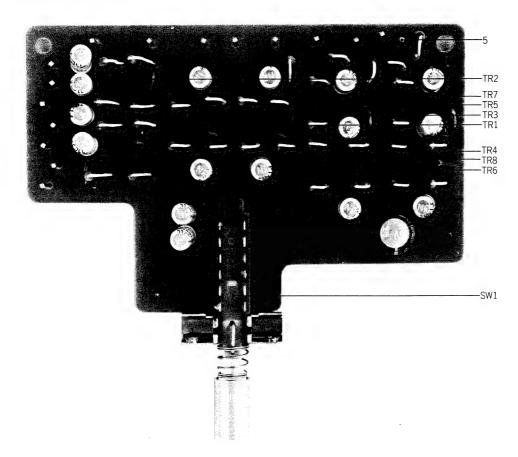
FIG. 7 PHOTO OF TONE P.C. BOARD (96-5006) BLOCK



TONE P.C. BOARD (96-5006) BLOCK

Symbol No.	Parts No.	Description	Q'ty
7-1x	BA562994	Tone P.C. Board Comp. (96-5006)	1
7-TR1, 2	ET539987	Transistor 2SC1312 (F) (G)	4
7-VR1, 2		Co-axial 2-throw Vol. (w/click)	
		V24L5GPHN 100k Ω x2 1 kB	
7-2	EJ539673	Wrapping Terminal T5290	9
		Capacitor, Vertical Type	
7-C1	EC338501	Elect. 1µF 50WV	2
7-C2	EC346206	Elect. 47µF 50WV	2
7-C3	EC338501	Elect. 1µF 50W	2
7-C4	EC379721	Mylar $0.0012\mu F(J)$ 50WV	2
7-C5, 6	EC379214	Mylar $0.047\mu F(J)$ 50WV	4
7-C7, 8	EC346590	Elect. 4.7μF 50WV	4
		Resistor, Stopper Type	
7-R1	ER211465	Carbon RD1/4 1k(J)	2
7-R2	ER423753	Carbon RD1/4 1.2M(J)	2
7-R3	ER371946	Carbon RD1/4 2k(J)	2
7-R4	ER361607	Carbon RD1/4 300(J)	2
7-R5	ER336442	Carbon RD1/4 10k(J)	2
7-R6	ER362485	Carbon RD1/4 330k(J)	2
7-R7	ER212681	Carbon RD1/4 330(J)	2
7-R8	ER346994	Carbon RD1/4 18k(J)	2
7-R9	ER336442	Carbon RD1/4 10k(J)	2
7-R10	ER430007	Carbon RD1/4 1.5M(J)	2
7-R11	ER213030	Carbon RD1/4 5.6k(J)	2
7-R12	ER306843	Carbon RD1/4 1.2k(J)	2 2
7-R13	ER347038	Carbon RD1/4 270(J)	2
7-R14	ER211667	Carbon RD1/4 100(J)	2
7-R15	ER211465	Carbon RD1/4 1k(J)	2

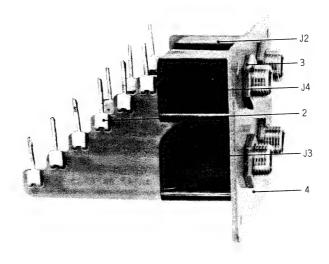
FIG. 8 PHOTO OF REMOTE P.C. BOARD (96-5003) BLOCK



REMOTE P.C. BOARD (96-5003) BLOCK

Symbol No.	Parts No.	Description	Q'ty	Symbol No.	Parts No.	Description	Q'ty
8-1x	BA562983	Remote P.C. Board Comp.				Resistor, Stopper Type	
		(96-500)	3) 1	8-R1	ER380711	Carbon RD1/4 220k(J)	1
8-TR1 to 8	ET539987	Transistor 2SC1312 (F) (G)	8	8-R2	ER211757	Carbon RD1/4 100k(J)	1
8-SW1	ES562781	Push SW. 1FS-4U-8	1	8-R3	ER304290	Carbon RD1/4 10(J)	1
8-J3	EJ557910	Socket CS289	1	8-R4	ER336442	Carbon RD1/4 10k(J)	1
8-2x	ZS379405	ISO Screw, binding head 3x6	2	8-R5	ER380711	Carbon RD1/4 220k(J)	1
8-3x	ZS371856	ISO Screw, binding head 3x5	2	8-R6	ER211757	Carbon RD1/4 100k(J)	1
8-4x	AZ545534	Remote SW. Mt. Angle	1	8-R7, 8	ER336442	Carbon RD1/4 10k(J)	2
8-5	EJ539662	Wrapping Post 1x17	15	8-R9	ER380711	Carbon RD1/4 220k(J)	1
				8-R10	ER211757	Carbon RD1/4 100k(J)	1
		Capacitor, Vertical Type		8-R11	ER304290	Carbon RD1/4 10(J)	1
8-C1	EC479621	Elect. 1µF 50WV NL	1	8-R12	ER336442	Carbon RD1/4 10k(J)	1
8-C2	EC399690	VFM 33PF(J) 50WV	1	8-R13	ER380711	Carbon RD1/4 220k(J)	1
8-C3, 4	EC479621	Elect. 1µF 50WV NL	2	8-R14	ER211757	Carbon RD1/4 100k(J)	1
8-C5	EC476324	VFM 30PF(J) 50WV	1	8-R15, 16	ER336442	Carbon RD1/4 10k(J)	2
8-C6, 7, 8	EC479621	Elect. 1µF 50WV NL	3	8-R17	ER211667	Carbon RD1/4 100(J)	1
8-C9	EC399690	VFM 33PF(J) 50WV	1	8-R18	ER211465	Carbon RD1/4 1k(J)	1
8-C10, 11	EC479621	Elect. 1µF 50WV NL	2	8-R19	ER404087	Carbon RD1/4 160k(J)	1
8-C12	EC476324	VFM 30PF(J) 50WV	1	8-R20	ER430007	Carbon RD1/4 1.5M(J)	1
8-C13 to 16	EC479621	Elect. 1µF 50WV NL	4	8-R21	ER362441	Carbon RD1/4 1.8k(J)	1
8-C17	EC476324	VFM 30PF(J) 50WV	1	8-R22	ER213096	Carbon RD1/4 510(J)	1
8-C18 to 20	EC479621	Elect. 1µF 50WV NL	3	8-R23	ER357570		1
8-C21	EC476324	VFM 30PF(J) 50WV	1	8-R24	ER211757	Carbon RD1/4 100k(J)	1
8-C22	EC479621	Elect. 1µF 50WV NL	1	8-R25	ER304290		1
8-C23	EC455354	Elect. 100μF 35WV	1	8-R26	ER336442	Carbon RD1/4 10k(J)	1
				8-R27	ER211465		1
				8-R28	ER404087	Carbon RD1/4 160k(J)	1
				8-R29	ER430007	Carbon RD1/4 1.5M(J)	1
				8-R 30	ER362441	Carbon RD1/4 1.8k(J)	1
				8-R31	ER213096		1
				8-R32	ER357570		1
				8-R33	ER211757		1
				8-R34	ER304290	,	1
				8-R35	ER336442	Carbon RD1/4 10k(J)	1

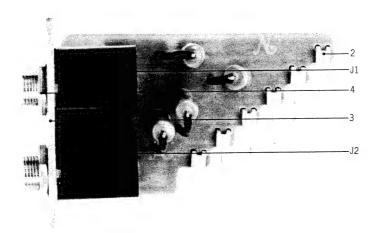
FIG. 9 PHOTO OF MIC, DUB P.C. BOARD (98-5059, 98-5013) BLOCK



MIC, DUB P.C. BOARD (98-5059, 98-5013)
BLOCK

Symbol No.	Parts No.	Description	Q'ty
9-1x	BA563016	Mic, Dub P.C. Board Comp.	
		(98-5059, 98-5013)	1
9-J1, 2	EJ391094	Mic. Jack 2PMJ1P	2
9-J3, 4	EJ391083	Mic. Jack 3PMJ1P	2
9-2	EJ550012	Wrapping Terminal T5280	9
9-3	ZW270191	E Jack Nut	4
9-4	AZ549112	Jack Mt. Plate	1

FIG. 10 PHOTO OF HP P.C. BOARD (98-5012) BLOCK

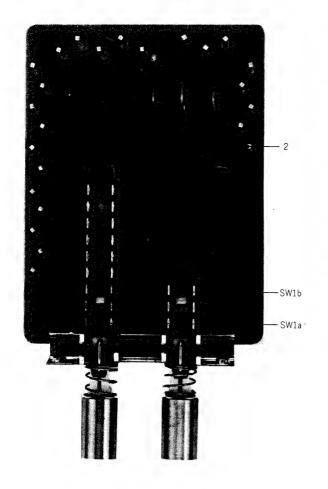


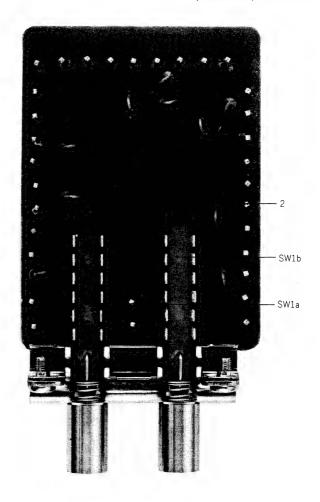
HP P.C. BOARD (98-5012) BLOCK

Symbol No.	Parts No.	Description	Q'ty
10-1x	BA560531	HP P.C. Board Comp. (98-5012)	1
10-J1, 2	EJ437321	Jack, 3P Molded 3PMJ1P	2
10-2	EJ550012	Wrapping Terminal T5280	6
10-3	AZ544836	Phone Jack Mt. Plate	1
10-4	ZW270191	E Jack Nut	2
10-R1 to 4	ER559034	Metal Oxide Film/R. 2W 3 30Ω	
		(K)) 4

FIG. 11 PHOTO OF LOUDNESS P.C. BOARD (96-5005) BLOCK

FIG. 12 PHOTO OF TAPE P.C. BOARD (96-5001) BLOCK





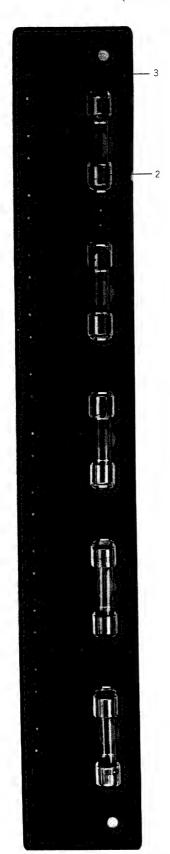
LOUDNESS P.C. BOARD (96-5005) BLOCK

Symbol No.	Parts No.	Description	Q'ty
11-1x	BA563005	Loudness P.C. Board Comp.	
		(96-5005)	1
11-SW1	ES591131	Push SW. 2FT-0001 FF-2020	1
11-2	EJ539662	Wrapping Post 1x17	24
		Capacitor, Vertical Type	
11-C1	EC368335	Mylar $0.022\mu F(J)$ 50WV	2
11-C2	EC389237	VFM 200PF(J) 50WV	2
		Resistor, Stopper Type	
11-R1	ER346994	Carbon RD1/4 18k(J)	2
11-R2	ER357570	Carbon RD1/4 150k(J)	2

TAPE P.C. BOARD (96-5001) BLOCK

Parts No.	Description	Q'ty
BA563027	Tape P.C. Board Comp. (96-5001)	1
ES551272	Push SW. 2FS-8U-70	1
EJ539662	Wrapping Post 1x17	32
EC557616	Ceramic/C. UFD06B 390PF(K)	
	50WV	8
	Resistor, Stopper Type	
ER371946	Carbon RD1/4 2k(J)	8
ER336442	Carbon RD1/4 10k(J)	2
	BA563027 ES551272 EJ539662 EC557616	BA563027 Tape P.C. Board Comp. (96-5001) ES551272 Push SW. 2FS-8U-70 EJ539662 Wrapping Post 1x17 EC557616 Ceramic/C. UFD06B 390PF(K) 50WV Resistor, Stopper Type ER371946 Carbon RD1/4 2k(J)

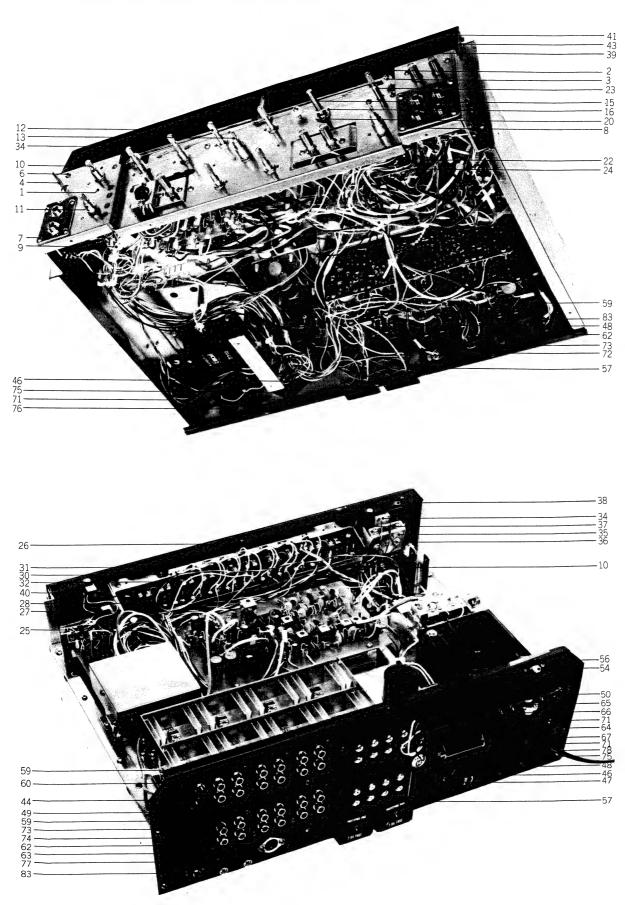
FIG. 13 PHOTO OF LAMP P.C. BOARD (97-5008) BLOCK



LAMP P.C. BOARD (97-5008) BLOCK

Symbol No.	Parts No.	Description	Q'ty
13-1x	BA562274	Lamp P.C. Board Comp. (97-5008)	1
13-2	EJ514822	Fuse Holder, P.C. Board S-N5051	10
13-3	EJ539662	Wrapping Post 1x17	17

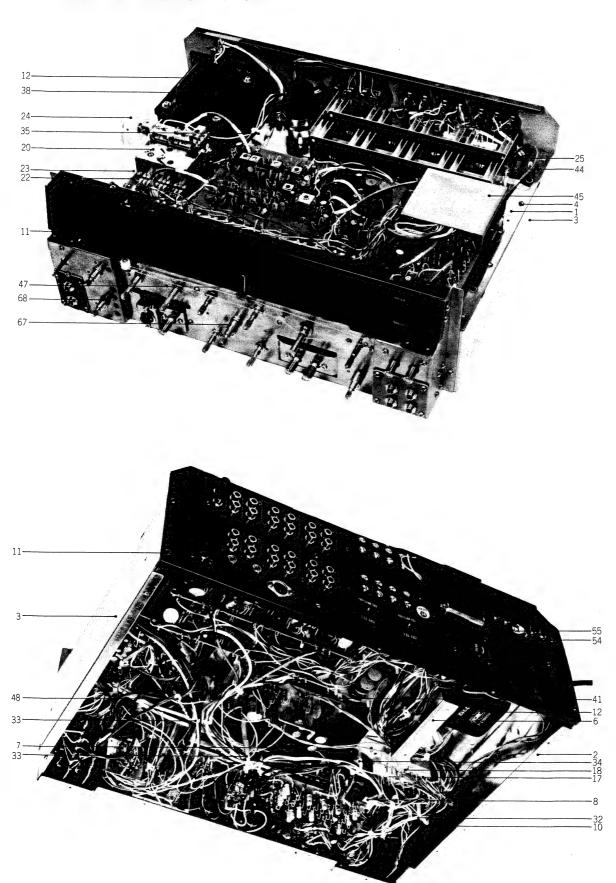
FIG. 14 PHOTO OF FRONT CHASSIS/REAR PANEL BLOCK



FRONT CHASSIS/REAR PANEL BLOCK

FRON	II CHASS	SIS/REAR FAIREL BL						0.1	
Ref. No.	Parts No.	Description	Schematic No. (Q'ty	Ref. No.	Parts No.	Description	Schematic Q'	
	FRONT CH	ASSIS BLOCK			14-57	EJ539796	Fuse Holder 2P	40-1-29	2
14-1		Front Chassis, w/chassis L,R	96-5018	1	14-58x	ZS447772	Tapping Screw #2 3x6 (BR)		4
14-2	ZS530684	Roller Screw B (L=13)	91-5010	3	14-59	EJ539763	Wrapping Pin Jack B 4P	31-1-106	5
14-3	MR530662	Roller B (D=10)	91-5009	4	14-60	EJ551340	Wrapping Pin Jack B 6P	31-1-102	1
14-4	ES468448	Lever SW. SDD4LFJO			14-61x	ER428567	Solid/R. RC1/2 2.2M(K)	35-5-4	1
•	22.00	(LPS60122FJ00)	25-4-12	1	14-62	EJ 299305	Jack, 5P Din	31-1-1	1
14-5x	EC551160	Ceramic/C. 0.01µF(Z)			14-63	ZS447761	Tapping Screw #2 3x6 (BR)		
110%	20001111	1.4kWV	24-5-55	2			(Black)		4
14-6	ZS371856	ISO Screw, binding head 3x5		12	14-64	AA530910	Antenna Channel	91-5029	1
14-7	ZS447772	Tapping Screw #2 3x6 (BR)		8	14-65	AA562803	Bar Antenna	55-1-19	1
14-8	EZ585731	Mic, Dub Spacer	96-5040	1	14-66	AA378268	Antenna Support	A A -5552	1
14-9	MZ229138	Wire Bundle Holder N-108	2-35-1	9	14-67	ZS379451	ISO Screw, round head 4x50		1
	ES561914	Rotary SW. SR32N 3-8-2			14-68x	ZW273914	Spring Washer M4		2
14-10	E3301914	25KC	25-7-34	1		ZW 556132	ISO Nut M4		1
14 11	ES561925	Rotary SW. SR32N 2-8-4	20.0.	_		ZW551373	Washer (Nylon) D4.2x8x0.5t		2
14-11	E3301923	25KC	25-7-32	1	14-71	EZ382263	Strain Relief SR-4K-4	2-7-12	2
14.10	EVE 40749	Vol. V16L4N 2B 200kΩ	36-6-4	4	14-72	AZ544950	Volume Retaining Parts	98-5049	1
14-12	EV562768	Co-axial 2-throw Vol.	30.0.4	•	14-73	EV557897	Vol. V16L4N B 1kΩ	36-6-2	1
14-13	EV562770	V24L5GN 2BL 250kΩx4	36-23-7	1	14-74	ZW552622	ISO Screw, pan head 3x6		
	ED2/4002	Carbon/R. RD1/4 18k(J)	30-23-1	•	1474	2002022	(Black)		2
14-14x	ER364983	(Insu. Type)	35-9-5	2	14-75	EJ378944	Socket, AC U/L S-1 9122	31-1-47	2
		•	91-5018	1	14-76	AA530908	Socket Nut	91-5028	2
14-15	MS530752	Tuning Shaft	91-5017	1	14-77	EZ486257	Metal Terminal T-10	32-1-27	2
14-16	AA530741	Tuning Metal	91-3017	2		EW540112	AC Cord (CUL) 2.5M	26-3-19	1
	ZW260122	Washer (Nylon) D6.1x10x1t	01 5010	1	14-78	EW524845	AC Cord (J) 2.5M	26-3-31	1
	BF530763	Flywheel	91-5019	1				26-3-26	1
14-19x	ZS462936	ISO Set Screw, hexagon		1		EW486797	Australia Cord (3 core)	26-3-11	1
		socket 3x5 (Cup/p)		1 1		EW315448	Strain Relief SR-6W-1	200-	
14-20	ZW 539 583	Nut M11			14-82X	EZ246936	(WG, 3 core)	2-7-8	1
14-21x		Washer (SPC) D11.2x16x0.5t	07 5000	1	44.02	E1254026	1P Pin-Jack	31-1-32	1
14-22	AZ545545	Selector SW. Mt. Angle	97-5020	1	14-83	EJ354936	Fuse 5A 250V	39-1-50	1
14-23	ES561936	Rotary SW. Y7-17-5	25-7-37	1	14-84X	EF575223	ruse 3A 230 V	00 1 00	
14-24	ES557763	Rotary SW. SR26N 5-15-5	05.0.00						
		35KH	25-6-63	1					
14-25	AZ547907	Push SW. Mt. Plate	96-5020	1					
	SCALE MT	. CHASSIS BLOCK							
14-26	AZ548188	Scale Plate Mt. Chassis	96-5021	1					
14-27	AA530785	Lamp Case	91-5021	1					
14-28	ZS447772	Tapping Screw #2 3x6 (BR)		15					
14-29x	EL539684	Fuse Type Lamp 8V 0.3A	28-2-27	6					
14-30	AA548201	Lamp Holder	96-5023						
14-31	AZ548190	Lamp Holder Case	96-5022	1					
14-32	EL550045	Cord Lamp 8V 50MA							
		(ST. IND.)	28-2-30						
14-33x	SM531336	Illumination Plate, Pointer	91-5065	1					
14-34	EM539685	Tuning Meter KL-218L-26	46-1-68	1					
14-35	AA530820	Meter Case	91-5025	1					
14-36	EJ367986	Fuse Holder 1P AC125V 5A	40-1-8	1					
14-37	AA530818		91-502	1					
14-38	ZS379405	ISO Screw, binding head 3x6		3					
14-39	EM558044		28-2-31	. 1					
14-40		Indicator Support	96-504	5 1					
14-41	AA548212		96-502	4 1					
	AA548256	- (-)	96-502	4 1					
14-43	EJ556143	Canoe Clip (Large)	2-7-35	2					
	REAR PAI	NEL BLOCK							
14-44	SP548166	Rear Panel A	96-502	5 1					
14-45	x SP548245	Rear Panel B (CSA)	96-502	5 1					
14-46	EJ233370	Socket (Volt. Selector)							
		S-18010	40-2-3	1					
14-47	ZW552611	ISO Screw, pan head 3x8							
		(Black))	11					
14-48	EJ 539785	Consent, Speaker (2-throw)	31-1-9	6 2					
14-49	ZS570385	ISO Tap-tight Screw (pan)							
*-4-42		3x8 (Black)	16					
14-50	AA510625		32-1-2						
	x ZW34810			5					
	x ZW273802			3					
	x ZW273802 x ZW273778			1					
			25-3-2						
14-54	x ER211320		2001	-					
14-55	A EN211320	(Stop. Type	35-10	·1 2					
14 56	ZW56201			_				•	
14-56	Z W 30ZU1	(Black		2					
		(Diaca	,	-					

FIG. 15 PHOTO OF ASSEMBLY BLOCK



ASSEMBLY BLOCK

ASSE	MRLI BL	UCK		
Ref. No.	Parts No.	Description	Schematic No. Q	'ty
		M. C.	00 5000	
15-1	AZ548032	Main Chassis, w/sub chassis Side Plate Left	96-5009 94-5002	1 1
15-2 15-3	AA532056 AA532067	Side Plate Right	94-5002	1
15-4	ZS447772	Tapping Screw #2 3x6 (BR)		61
15-5x	ZW273778	Earth Lug M3		2
15-6	AA532078	Reinforcement Angle A	94-5004	1
15-7	AZ530695	Reinforcement Angle	91-5011	1
15-8	AZ548111	P.C. Board Support 3	96-5031	1
15-9x	ZS371856	ISO Screw, binding head 3x5	00 5010	2
15-10	AA548065	Insulator Plate Tapping Screw #2 3x6 (BR)	96-5013	1
15-11	ZS447761	(Black)		12
15-12	BT562724	Power Trans. AS-960T-1	38-4-257	1
15-12 15-13x	BT592222	Power Trans. AS-960T-2		
10 10	210/222	(CSA)	38-4-291	1
15-14x	ZW273914	Spring Washer M4		4
15-15x	ZW444251	ISO Nut M4		4
15-16x	ZW273881	Earth Lug M4		1
15-17	EJ550067	Lug Plate 4P T-5305	33-5-5	3
15-18	ZS447805	Tapping Screw #2 3x12(BR)		3
15-19x	EJ254970	Lug Plate KP1L1	33-3-3	1
15-20	AF562735	Front End FB-112U12 or 21	57-2-29	1
15-21x	AF562825	Front End FB-112J14 (J) Front End P.C. Board	57-2-30 96-5007	1 1
15-22	AZ548021 AZ548054	Front End P.C. Board Front End Retaining Base	96-5011	1
15-23 15-24	MR530706	Pulley	91-5012	1
15-25	ZS321298	ISO Screw, binding head 3x8	01 0012	9
15-25 15-26x	ZG549011	Tuning Spring	91-5094	1
15-27x	AZ548133	Roller Mt. Angle	96-5035	1
15-28x	MR530662	Roller B (D=10)	91-5009	1
15-29x	MR530651	Roller A (D=14)	91-5008	2
15-30x	ZW530673	Roller Screw A (L=9)	91-5010	1
15-31x	ZS530684	Roller Screw B (L=13)	91.5010	1
15-32	EJ551057	Wire Clip 220-JD481010-0021	2-7-27	3 2
15-33	EJ557717	Wire Clip 220 ID485210-01	2-7-26	2
15-34	EJ514607	Wire Clip 220-JD485210-01 (Nylon)	2-7-18	1
15-35	EJ557728	Wire Clip 0128	2-7-19	3
15-36x	EJ510333	Wire Clip 220-JD481610-		
10 00%		0104 (Nylon)	2-7-17	2
15-37x	EJ551035	Wrapping Terminal 4P T5251	32-1-36	3
15-38	EC555996	Elect./C. 3300µF 63WV		
		(Lug Type)	24-10-84	1
15-39x	ER452777	Carbon/R, RD1/4 160kΩ(J)		
		(Insu. Type)	35-9-5	2
15-40x	ER364994	Carbon/R. RD1/4 39kΩ(J)	35-9-5	2 16
15-41	EJ514034	PC Support	2-7-20 97-5038	2
15-42x	EZ545602	P.C. Board Support P.C. Board Support 2 (Small)	96-5030	1
15-43x 15-44	EZ548100 AZ548098	Heat-sink Mt. Plate	96-5017	2
15-45	AZ547356	SQ Shield	97-5050	1
15-46x		IF P.C. Board Mt. Plate	91-5005	2
15-47	AA530954	Dial Pointer	91-5039	1
15-48	MZ229138	Wire Bundle Holder N-108	2-35-1	10
15-49x	EF563703	Fuse 2A 250V	39-1-50	4
15-50x		Fuse 2.5A 250V	39-1-50	1
15-51x		Fuse 5A 250V	39-1-50	1
15-52x		Fuse 3A 250V	39-1-50	1
15-53x		Fuse 0.8A 250V	39-1-50 2-34-78	1 2
15-54	AA539537 ZS552622	Fuse Holder Cover 2P ISO Screw, pan head 3x6	2-34-10	2
15-55		Fuse P.C. Board Mt. Base		-
15-56x	m2576516	(CSA)	98-5101	1
15-57x	ZS325495	Tapping Screw #2 3x6		5
15-58x		Fuse P.C. Board (CSA)	98-5102	1
15-59x		Wrapping Post 1x17	32-1-48	7
15-60x		Fuse Holder, P.C. Board		
	_	H0006 (CSA)	40-1-36	14
15-61 x		ISO Screw, binding head 3x6	00 5050	2
15-62x			96-5052	1
15-63x	MZ229138	Wire Bundle Holder N-108 (CSA)	2-35-1	3
		(CDII)	_ 30 =	-

Ref. No.	Parts No.	Description	Schematic No. Q	'ty
15-64x	MZ259233	Wire Band C (CSA)	3A.745	1
15-65x	ZW273881	Earth Lug M4		1
	ER428567	Solid/R. RC1/2 2.2M(K)	35-5-4	1
15-67	AA531371	Stop Collar 2 (L=12.5)	91-5074	2
15-68		Stop Collar 1 (L=2.5)	91-5074	1

FIG. 16 PHOTO OF FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No. Q	'ty
	FRONT PA	NEL BLOCK		
16-1	SP547918	Front Panel	96-5027	1
16-2	AA541517	Side Molding A (Right)	91.5082	1
16-3	AA541528	Side Molding B (Left)	91.5082	1
16-4	AA531156	Side Fitting A (Right)	91-5046	1
16-5	AA531167	Side Fitting B (Left)	91-5046	1
16-6x	ZS447805	Tapping Screw #2 3x12 (BR)	******	6
16-7	AA531044	Front Plate 7	91-5044	1
16-8	AA531145	Fitting 2	91-5045	2
16-9x	AA530976	Cushion, Retaining Plate	91-5043	2
16-10x	ZS447840	Tapping Screw #2 3x8 (BR)		2
16-11	AA545905	Push Button Bush	98-5061	5
	ASSEMBLY	BLOCK		
16-12x	SP533430	Bottom Plate	94-5035	1
16-13x		Tapping Screw #2 3x6 (BR)		9
16-14x		Rubber Foot, LM	LM-404	4
16-15x		Washer (SPC) D4.5x9.8x0.5t		4
16-16x	ZS463375	Tapping Screw #2 4x15		
		(Truss)		4
16-17	ZW526577	Collar B, Jack	MC-5006	6
16-18x	ZW406416	Tapping Screw #2 3x8		
		countersunk		3
16-19x	ZS447840	Tapping Screw #2 3x8 (BR)		2
16-20	SK531213	Tuning Knob	91-5050	1
16-21x	ZS446422	ISO Set Screw, hexagon		
		socket 4x8 (cup/p.)		1
16-22	SK531314	Power Knob	91-5060	1
16-23	SK547964	Selector Knob	98-5080	4
16-24	SK531224	Push Button Knob	91-5051	5
16-25	SK531281	Single Knob	91-5057	2
16-26	SK548144	Balance Knob	96-5029	4
16-27	SK548076	Main Volume Knob	96-5014	1
16-28	BC533452	Cabinet	94-5038	1
16-29	ZW548010	Spot Facing Washer	MU-6028	4
16-30	ZS552824	ISO Screw, binding head 4x18		4
16-31x	ZW562757	Washer D4.3x11x0.8t		4
16-32	AA545894	Remote Jack Cover	98-5062	1
16-33x	EJ552778	Short Pin Plug P0107	42-1-65	2
16-34x	AA560092	FM Antenna AFM-1B		
		(5003-03)	55-1-18	1
16-35x	AA560081	FM Antenna AFM-1A		
	mm=+	(5003-04) (J)	55-1-18	1
16-36x		Fuse 6A 125V	39-1-47	1
16-37x		Fuse 3A 250V	39-1-50	1
16-38x		Fuse 5A 125V	39-1-47	1
16-39x	EF562691	Fuse 2.5A 250V	39-1-50	1

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
AA378268	14-66	EC220994	1-C55	EC479621	8-C10, 11	EJ 592064	15-60x	ER213030	2-R33
AA510625	14-50	EC220994	4-C5	EC479621	8-C13 to 16	EL539684	14-29x	ER213030	7-R11
AA530627	15-46x	EC228745	3-C10	EC479621	8-C13 to 20	EL550045	14-32	ER213096	8-R22
AA530741	14-16	EC250661	1-C59	EC479621	8-C22	EM539685	14-34	ER213096	8-R31
AA530785	14-27	EC250683	4-C7	EC483142	4-C1	EM558044	14-39	ER213120	1-R7
AA530818	14-37	EC250885	1-C48	EC492142	1-C26 to 34	EO443700	1-T1	ER213715	3-R1
AA530820	14-35	EC250885	1-C53, 54	EC517138	4-C6	EO443766	1-T7	ER304290	1-R37
AA530908	14-76	EC250964	1-C71, 72	EC522551	2-C12	EO443777	1-T8	ER304290	1-R61
AA530910	14-64	EC290520	2-C18, 19	EC522551	2-C15	EO443788	1-L2, 3	ER304290	3-R22, 23
AA530954	15-47	EC290520	3-C4	EC522551	2-C17	EO537232	1-T2	ER304290	8-R3
AA530976	16-9x	EC290520	3-C6	EC538435	2-C3 1-C43, 44	EO539820 ER211320	1-L1 1-R46	ER304290 ER304290	8-R11 8-R25
AA531044	16-7	EC290520	3-C13 1-C40	EC539842 EC551160	3-C11	ER211320	2-R40	ER304290	8-R34
AA531145 AA531156	16-8 16-4	EC290531 EC290531	1-C46	EC551160	5-C1	ER211320	3-R8	ER304402	1-R50
AA531167	16-5	EC313108	2-C2	EC551160	6-C1 to 5	ER211320	4-R1	ER304402	1-R55
AA531360	15-68	EC320040	1-C41, 42	EC551160	14-5x	ER211320	14-55x	ER304402	1-R60
AA531371	15-67	EC320051	1-C47	EC555996	15-38	ER211465	1-R12	ER306360	2-R45
AA532056	15-2	EC321208	1-C57	EC557616	12-C1 to 8	ER211465	1-R18	ER306843	1-R42
AA532067	15-3	EC321221	3-C2	EC557627	5-C5	ER211465	1-R24	ER306843	2-R6
AA532078	15-6	EC321221	5-C4	EC562847	3-C9	ER211465	1-R30, 31	ER306843	7-R12
AA539537	15-54	EC321221	5-C6	ED219464	1-D7 to 9	ER211465	1-R45	ER306887	1-R66 1-R69
AA541517	16-2	EC329850	4-C10	ED224526	5-D1 to 8	ER211465	1-R51	ER 306887	
AA541528	16-3	EC329883	2-C5	ED224526	5-D11 to 14	ER211465	1-R54	ER 306887	2-R4 3-R18
AA544926	14-40	EC329883	2-C10	ED428264	1-D1 to 6	ER211465	4-R3	ER306887 ER306887	3-R18 4-R5
AA545117	5-2	EC331705	1-C52	ED539976	5-D9	ER211465	7-R1 7-R15	ER306887	5-R4
AA545894	16-32	EC336104	3-C7	ED556514	3-D1 6-D1 to 4	ER211465 ER211465	8-R18	ER306887	5-R10
AA545905	16-11 15-10	EC336148	5-C8	ED558033 ED562814	6-D1 to 4 5-D10	ER211465	8-R27	ER324202	3-R9
AA548065 AA548201	14-30	EC336216 EC337500	4-C9 2-C8	EF562544	16-36x	ER211667	1-R5	ER324202	4-R11
AA548211	14-41	EC337500 EC338501	7-C1	EF562680	16-38x	ER211667	1-R13	ER336442	1-R9
AA548256	14-42x	EC338501	7-C3	EF562691	15-50x	ER211667	1-R19	ER336442	1-R15
AA560081	16-35x	EC342821	1-C67, 68	EF562691	16-39x	ER211667	1-R27	ER336442	1-R21
AA560092	16-34x	EC346206	7-C2	EF563657	15-52x	ER211667	1-R29	ER 336442	1-R33 to 3
AA562803	14-65	EC346590	7-C7, 8	EF563657	16-37x	ER211667	1-R32	ER336442	1-R49
AF562735	15-20	EC346735	4-C2	EF563703	15-49x	ER211667	1-R40 1-R43	ER336442	2-R1 2-R3
AF562825	15-21x	EC350706	1-C37	EF575223	14-84x	ER211667 ER211667	1-R43 1-R47	ER 336442 ER 336442	2-R3 2-R22
AZ530695	15-7	EC350706	1-C58	EF575223	15-51x	ER211667	1-R52	ER336442	3-R3
AZ544836	10-3 14-72	EC350706	1-C60 to 62	EF575932 EI443744	15-53x 1-IC2	ER211667	1-R58	ER336442	5-R7, 8
AZ544950 AZ545534	8-4x	EC350706 EC350875	1-C73, 74 1-C65, 66	EI485291	1-IC2 1-IC1	ER211667	2-R52	ER 336442	7-R5
AZ545545	14-22	EC350875	2-C9	EJ233370	14-46	ER211667	7-R14	ER 336442	7-R9
AZ547356	15-45	EC354947	3-C1	EJ254970	15-19x	ER211667	8-R17	ER 336442	8-R4
AZ547907	14-25	EC354947	3-C5	EJ299305	14-62	ER211757	2-R20, 21	ER336442	8-R7, 8
AZ547942	14-1	EC357827	1-C36	EJ354936	14-83	ER211757	2-R29	ER336442	8-R12
AZ548021	15-22	EC362158	1-C63, 64	EJ367986	14-36	ER211757	2-R42	ER 336442	8-R15, 16 8-R26
AZ548032	15-1	EC368335	2-C7	EJ378944	14-75	ER211757	2-R46 3-R5	ER 336442 ER 336442	8-R35
AZ548054	15-23	EC368335	11-C1	EJ391083	9-J3, 4	ER211757 ER211757	8-R2	ER336442	12-R9, 10
AZ548098 AZ548111	15-44 15-8	EC368357 EC373296	2-C4 3-C12	EJ 39 1 09 4 EJ 4 3 7 3 2 1	9-J1, 2 10-J1, 2	ER211757	8-R6	ER342933	2-R10
AZ548133	15-27x	EC373290 EC377212	3-C12	EJ 51 0333	15-36x	ER211757	8-R10	ER342933	2-R16
AZ548188	14-26	EC377212	3-C8	EJ514034	15-41	ER211757	8-R14	ER342933	2-R41
AZ548190	14-31	EC379214	7-C5, 6	EJ514607	15-34	ER211757	8-R24	ER343078	1-R62, 63
AZ549112	9-4	EC379721	2-C6	EJ514822	13-2	ER211757	8-R33	ER343078	2-R44
AZ562836	3-3	EC379721	7-C4	EJ539662	1-3	ER212016	3-R12	ER 346544	2-R15 2-R17
BA560531	10-1x	EC380621	4-C8	EJ539662	2-2	ER212016	4-R7 2-R9	ER 346544 ER 346601	1-R38
BA560676	6-1x	EC389237	11-C2	EJ539662	4-2	ER212264 ER212264	2-R9 5-R9	ER346601	2-R26
BA562274	13-1x	EC390633	1-C69, 70	EJ539662 EJ539662	5-4 6-2	ER212264	5-R9 5-R11	ER346601	2-R30
BA562342 BA562983	2-1x 8-1x	EC399690	8-C2	EJ539662 EJ539662	6-2 8-5	ER212477	1-R10	ER346601	2-R32
BA562983 BA562994	8-1 x 7-1 x	EC399690 EC403468	8-C9 5-C2, 3	EJ539662 EJ539662	11-2	ER212477	1-R16	ER346601	2-R51
BA563005	11-1x	EC404256	1-C2 to 25	EJ 539662	12-2	ER212477	1-R22	ER346601	5-R12
BA563016	9-1x	EC404230	1-C2 to 23	EJ539662	13-3	ER212681	1-R11	ER346994	
BA563027	12-1x	EC427937	1-C49	EJ539662	15-59x	ER212681	1-R14	ER346994	
BA563106	1-1 x	EC432808	1-C56	EJ539673	7-2	ER212681	1-R17	ER 346994	
BA563117	4-1 x	EC443654	1-C35	EJ539763	14-59	ER212681	1-R20	ER 347038	
BA563861	1-2x	EC450527	2-C11	EJ539785	14-48	ER212681	1-R23	ER 347038	
BA570407	5-1 x	EC450527	2-C13, 14	EJ539796	14-57	ER212681	1-R28	ER349784 ER349828	
BA570914	3-1 x	EC450527	2-C16	EJ550012	3-6	ER212681 ER212681	1-R57 1-R71	ER349828	
BC533452 BF530763	16-28 14-18x	EC450527 EC450527	2-C20, 21 4-C4	EJ550012 EJ550012	9-2 10-2	ER212681 ER212681	7-R7	ER 349828 ER 349907	
	1-T4		2-C1	EJ550067	15-17	ER212883	1-R3	ER 349942	
BT379991 BT380384	1-14 1-T5	EC455354 EC455354	2-C1 8-C23	EJ551035	15-17 15-37x	ER212883	2-R7, 8	ER 349942	2-R23
BT427915	1-15 1-T3	EC455354 EC476324		EJ551055	15-37X 15-32	ER212883	3-R6	ER350100	3-R10
BT443610	1-T6	EC476324	8-C5	EJ551340	14-60	ER212883	3-R11	ER352045	2-R36
BT562724		EC476324	8-C12	EJ552778	16-33x	ER212883	5-R1	ER352045	2-R38
BT592222	15-13x	EC476324	8-C17	EJ556143	14-43	ER213030	1-R53	ER357412	1-R26
EA598320		EC476324	8-C21	EJ557717	15-33	ER213030	1-R56	ER357412	
EC220127	5-C7	EC479621	8-C1	EJ557728	15-35	ER213030	1-R67	ER357412	
		EC479621	8-C3, 4	EJ557910	8-J3x	ER213030	1-R70	ER357456	
EC220994 EC220994		EC479621	8-C6, 7, 8	EJ558022	5-5x	ER213030	2-R31	ER357456	1.Kh4.h

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No
ER357456 ER357456 ER357535 ER357570 ER357570 ER357570 ER357570 ER357570 ER357570	1-R68 2-R11 to 14 1-R48 4-R9 2-R5 2-R34, 35 4-R4 8-R23 8-R32 11-R2	ET452531 ET510693 ET517994 ET517994 ET539122 ET539987 ET539987 ET539987 ET539987 ET539987	3-TR5, 6 1-TR5 5-TR2 5-TR4 5-TR3 2-TR1 to 6 3-TR1 4-TR1, 2 7-TR1, 2 8-TR1 to 8	ZS462936 ZS463375 ZS530684 ZS530684 ZS552622 ZS552824 ZS570385 ZW260122 ZW270191 ZW270191	14-19x 16-16x 14-2 15-31x 15-55 16-30 14-49 14-17x 9-3 10-4				
ER361528 ER361528 ER361528 ER361607 ER362441 ER362441 ER362441 ER362485 ER362520 ER363644	1-R1 1-R44 2-R50 7-R4 5-R2 8-R21 8-R30 7-R6 2-R24 1-R4	ET554016 ET557998 ET562858 ET591366 EV383398 EV409858 EV539831 EV555941 EV557897 EV562768	1-TR1 to 4 5-TR1 3-TR2, 3, 4 1-TR6 to 8 3-VR1 3-VR2 1-VR1 7-VR1, 2 14-73 14-12	ZW273778 ZW273778 ZW273802 ZW273881 ZW273914 ZW273914 ZW348107 ZW348107 ZW406416	14-53x 15-5x 14-52x 15-16x 15-65x 14-68x 15-14x 3-5 14-51x 16-18x				
ER364948 ER364983 ER364994 ER371946 ER371946 ER379473 ER379473 ER379552 ER379596 ER380406	3-R2 14-14x 15-40x 4-R8 7-R3 12-R1 to 8 4-R6 2-R19 3-R19 1-FL4	EV562770 EW315448 EW486797 EW524845 EW540112 EZ246936 EZ382263 EZ486257 EZ545602 EZ548100	14-13 14-81x 14-80x 14-79x 14-78 14-82x 14-71 14-77 15-42x 15-43x	ZW419646 ZW426622 ZW444251 ZW526577 ZW530673 ZW539583 ZW539594 ZW548010 ZW551373 ZW552611	16-15x 3-7x 15-15x 16-17 15-30x 14-20 14-21x 16-29 14-70x 14-47				
ER 380417 ER 380711 ER 380711 ER 380711 ER 380711 ER 380711 ER 380755 ER 380755 ER 380755	1-FL4 1-R6 8-R1 8-R5 8-R9 8-R13 2-R27 4-R12 3-R14 2-R39	EZ548234 EZ585731 MR550651 MR530662 MR530762 MS530752 MZ229138 MZ229138 MZ229138	3-2 14-8 15-29x 14-3 15-28x 15-24 14-15 14-9 15-48 15-63x	ZW552622 ZW556132 ZW562015 ZW562757	14-74 14-69x 14-56 16-31x				
ER392850 ER399060 ER404087 ER404087 ER407316 ER407316 ER407316 ER419556 ER419556 ER419556	4-R10 2-R48 8-R19 8-R28 2-R18 2-R43 2-R47 2-R28 4-R13 1-R59	MZ259233 MZ598318 MZ598498 SA377190 SK531213 SK5531224 SK531281 SK531281 SK531314 SK547964 SK548076	15-64x 15-56x 15-62x 16-14x 16-20 16-24 16-25 16-22 16-23 16-27						
ER423753 ER423753 ER428567 ER428567 ER430007 ER430007 ER430007 ER430007 ER430086 ER443878	2-R25 7-R2 14-61x 15-66x 3-R4 7-R10 8-R20 8-R29 2-R2 4-R2	SK548144 SM531336 SP533430 SP547918 SP548166 SP548245 ZG549011 ZS321298 ZS321298 ZS321298	16-26 14-33x 16-12x 16-1 14-44 14-45x 15-26x 3-8 15-25 15-57x						
ER452542 ER452777 ER536984 ER539818 ER556064 ER556795 ER559034 ER559034 ES320016 ES379405	3-R20 15-39x 5-R6 1-FL1 to 3 3-R16, 17 3-R21 5-R5 10-R1 to 4 14-54 15-61x	ZS371856 ZS371856 ZS371856 ZS379405 ZS379405 ZS379451 ZS446422 ZS447761 ZS447761 ZS447772	8-3x 14-6 15-9x 8-2x 14-38 14-67 16-21x 14-63 15-11 5-3						
ES468448 ES513922 ES551272 ES557763 ES561914 ES561925 ES561936 ES562781 ES591131 ET398711	14-4 1-SW1 12-SW1 14-24 14-10 14-11 14-23 8-SW1 11-SW1 1-TR9, 10	ZS447772 ZS447772 ZS447772 ZS447772 ZS447772 ZS447805 ZS447805 ZS447840 ZS447840 ZS450832	14-7 14-28 14-58x 15-4 16-13x 15-18 16-6x 16-10x 16-19x 3-4						

SECTION 3 SCHEMATIC DIAGRAM

55

